



Administration for  
Children's Services

# New York City

## Administration for Children's Services Civil Service Test Prep Program Guide



NEW  
YORKERS  
FOR  
CHILDREN



A Guide for Facilitators  
of Youth in Care

2018

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# INTRODUCTION

## The New York City Administration for Children's Services Civil Service Test Prep Program Guide

**THIS GUIDE** is intended to provide engaging, hands-on activities to give candidates practice in the skill areas used in civil service employment. They are to be used in support of the practice materials presented in the Test Guides and Resource Booklets for Local Examinations provided by the New York State Department of Civil Service which are designed to familiarize candidates with the format of the Civil Service Exams.

Each activity focuses on one or more skills that will be tested in various civil service exams. The skills will be listed in each lesson and can also be found in each table of contents.

Activities are categorized into five groups:

1. **ART** – drawing, creating, analyzing
2. **DRAMA** – role play, improvisation exercises, dramatic movement
3. **GAMES** – teambuilding exercises, board games, partner games
4. **MATH LESSONS** – calculation and problem solving challenges
5. **TECHNOLOGY** – free games available on the Internet

There are three table of contents for ease of use:

1. **ART, DRAMA, AND GAMES**
2. **SKILL BUILDING THROUGH MATH**
3. **SKILL BUILDING THROUGH TECHNOLOGY: ONLINE GAMES FOR BUILDING SKILLS**

In the section “How to Use This Guide,” you will find facilitator tips for implementation. Familiarize yourself with all the materials before planning.

# ACKNOWLEDGEMENTS

## The New York City Administration for Children's Services Civil Service Test Prep Program Guide

**THE ADMINISTRATION FOR CHILDREN'S SERVICES (ACS) AND THE DIVISION OF FAMILY PERMANENCY SERVICES (FPS)** would like to acknowledge and express deep gratitude to New Yorkers for Children (NYFC) for seeing the potential and promise in creating this guide, and generously providing the funding that made it possible. NYFC is a nonprofit partner to ACS whose mission is focused on improving the lives of youth through education and access to opportunity. NYFC has more than 20 years of experience working directly with transition-aged youth, ACS, and the city's foster care agencies.

In addition, FPS would like to thank Commissioner David Hansell, former Commissioner Gladys Carrión, First Deputy Commissioner Eric Brettschneider and Deputy Commissioner Julie Farber for your contributions and collaborations toward creating this guide – The New York City Administration for Children's Services Civil Service Test Prep Program Guide (herein, the Guide).

The Guide's content was written by Community Change, Inc. (CCI), a capacity-building consulting firm partnering with ACS on this project. CCI is recognized for their expertise in developing workshops and curricula providing youth workshops, curricula and college courses based on their niche models for career explorations, community organizing, cultural awareness, and relationship building. CCI also writes grant proposals, delivers staff trainings, and provides strategic planning for agencies. The Guide's use of the expertise of executive-level civil servants, actual civil service exam testing material, and labor market information (LMI) has been invaluable.

To the Department of Administrative Services (DCAS) team: support in completing this guide aligns this initiative with the City's efforts to prioritize resources toward industries where there is job growth, good pay and career advancement. The City of New York is the largest employer in the city employing over 500,000 people. Through this effort we can ensure that some of New York's best and brightest are included in the City's job opportunities.

To all of our foster care and juvenile justice partners: we hope that The Guide's interactive curriculum affords you an enhanced opportunity to engage youth so that they can make informed choices about careers in public service. Your use of this guide will afford youth an opportunity to improve testing skills, employability, and self-advocacy. Ultimately, youth can increase their chances to pass the qualifying exams offered through the City's civil service system.

Finally, we want to thank all of our strategic partners, civil servants, and providers who we couldn't mention by name. We acknowledge and recognize your tireless efforts. This guide is an example of your professionalism and commitment to our work. Your careers in public service are inspiring and offer wonderful aspirational goals to New York City's youth.

### **For more information about ACS' Civil Service Pathways for Youth Program**

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# HOW TO USE THIS GUIDE

## Tips for Facilitators

- **Facilitators** should review the index on the following pages to select the focus skills that need support. Read the activities to be sure of your own comfort level with the instructions and activities.
- **Plan the skills you will teach**, and select the type of activity that best suits your students' learning styles. The kinesthetic and interpersonal learners will benefit from lessons with movement; spatial learners will need art and games; the logical learners will gravitate toward math; the intrapersonal, musical, and linguistic learners will need games and technology. It is highly recommended that you use a variety of activities to cover a range of learning styles.
- **Decide when** you will use the activity or lesson. Will you use it as a hook to introduce the skill? Would it work best as a main activity? Should it be used instead of the lesson from the State resource? Will it be a reward for paper and pencil work? "When" you teach the lesson/activity is as important as the activity itself.
- **Estimate the amount of time** you will need to introduce, teach, explore, and assess each skill. The activities provided range from 10 minutes to 45-minutes. How much time can you allot to the activity and the necessary assessment of student mastery?
- **Keep in mind** that once students have acted, drawn, moved, or played a game, they might need guidance to understand how to apply the skill to a printed test format. To that end, each of the activities contains "Connection Conversations". These are questions that can be used to help participants create their own understanding of how to apply the skills practiced in the activities to the different civil service exams.
- **Collect the materials** you will need in advance of the class. There are few things as frustrating as arriving to class without the necessary items to teach – for both the teacher and the student.
- **Set the stage.** The room set up is an integral part of any class. Circles work best for discussions. Drama activities tend to require space for movement. Many art activities will need flat surfaces, and technology games require...technology! Be sure you have the right room and set up for each activity and lesson.
- **Check the tech.** In addition to making sure the classroom technology is available and working, play the suggested games ahead of time to ensure you understand the directions and the quirks of the game. You could consider making it a student challenge to evaluate the games.
- **Take notes.** What worked? What needs improvement? What changes, adaptations, or adjustments did you make? Write down success stories for your own professional development and personal record.

# Title of Activity: “Quiz”

## Type of Activity: Game/Test Prep

**TIME NEEDED: 5-10 MINUTES**

### SKILLS:

- Interpretations of rules, regulations, and instructions (reading directions)
- Interpreting and following directions

### PROJECT AND PURPOSE:

Take a preparation quiz that is all about reading directions.

### MATERIALS:

- One copy of the quiz per student
- Writing implements

### PROCEDURE:

1. Set up the room as if students are taking a test (e.g., space between desks, privacy protectors, etc.).
2. Instruct students to take a seat, get out a pencil, and make sure everything is cleared, just as if they were taking a civil service test on paper.
3. Distribute the quiz on page 8 to all students and tell them it is a paper practice quiz for the civil service exam. Encourage them to read everything carefully. They will have 10 minutes to complete the quiz.
4. After they get to the last line of the page, you will hear groans and painful noises.

### CONNECTION CONVERSATION:

Discuss the “quiz.”

1. What did they learn from this exercise?
2. Why is it important to read the directions carefully before taking the test?
3. How will this experience help them when taking the civil service exam?

### NOTES:

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# Civil Service Test Prep: Practice Quiz

1. Read all directions first.
2. Write full name in upper left corner.
3. Write date in upper right corner.
4. In the first box on the right, write names of three people who could serve as personal references.
5. In the second box, write your top three qualities/characteristics.
6. In the third box, put the words in alphabetical order.
7. Use your pencil or pen to make a small hole in the paper in the third box.
8. Fold this paper into a paper airplane.  
Reopen to continue quiz.
9. Circle the one that is NOT a word:  
skeeziX, skirball, skedaddle.
10. Ignore steps 3-9 and turn paper over.

## Box 1

## Box 2

## Box 3

- armoire
  - armature
  - army
- 
- 
-

# **Title of Activity: Bag Drawing**

## **Type of Activity: Art**

**TIME NEEDED: 30 MINUTES**

### **SKILLS:**

- Advising and interacting with others
- Drawing conclusions from evidence
- Providing good customer service

### **PROJECT AND PURPOSE:**

Participants will work in pairs to create a group drawing of an object they can only feel, not see.

### **MATERIALS:**

- Paper
- Pencils/erasers
- Hard surface for drawing (desk top, clipboard, book, etc.)
- Unbreakable objects in cloth bags; the bags should be thin enough for students to feel the objects and identify their shapes and characteristics, but no one should be able to see through or into the bags. Taping them shut with duct tape is a good idea!

### **PROCEDURE:**

1. Explain that in this session, participants will work together in pairs to create a group drawing. A group drawing is a drawing by two or more people. It involves working together towards an end product, giving and taking, taking the lead and allowing oneself to follow depending on what is needed at the time.
2. Ask students to find a partner and give each pair two pieces of paper, a pencil, and an object in a bag. Tell them not to look in the bags. Each object in a bag has a form; it is three dimensional, and it takes up space. They should think of the object in the bag as a piece of evidence. Discuss what this means with the group.
3. In each pair, one student will be the describer, and one will be the artist.
  - The artist's responsibility is to listen and draw. The artist looks only at the paper, listens to and draws whatever the describer says. It is okay to ask for clarification, but the artist must follow directions as carefully as possible.
  - The describer takes responsibility for the object in the bag. Keeping the object wrapped in the bag, the describer feels the object and describes the form the artist must draw. If the describer immediately recognizes the object by its feel, he/she will need to describe the way it is to be drawn without identifying the object. It is important to be specific and think about the details of the object.

- An example might be, “This is a 6-inch long, narrow, hard item. Like a straight stick. It has ridges going down the length of it. There is a softer part at one end, and there is a point at the other.”
4. Give the pairs 5-10 minutes to complete their drawing. At the end of the time, ask them to keep the bag closed; however, let them discuss the drawing and the process. Do they think they were successful?
  5. Have the describer of each pair exchange their bag with another pair. With the new bag, swap roles so the artist becomes the describer and vice versa. Follow the same instructions.
  6. At the end of the 10 minutes, collect all the bags while the pairs discuss their drawings. Open each bag and place the items in a space where everyone can see.
  7. Ask the pairs to identify, compare, and contrast the objects they drew to the real objects.

### CONNECTION CONVERSATION:

Discuss the activity using the following questions:

1. What was easy about this game? What was challenging? Why?
2. Talk about the concept of evidence.
  - Why is it important to use all of your senses to notice and describe pieces of evidence in detail?
  - Why was it important to describe it to the artist?
  - Why are these skills important for certain jobs? When and why would you need to use these skills?
3. How did this exercise demonstrate your ability to work with a team?
4. What strategies did you use to help you communicate well with your partner?
5. On some of the civil service exams, you will be required to demonstrate knowledge of appropriate ways to interact and communicate with others. How did this game help you work with those skills?
6. What are some jobs that require the skills involved in this exercise?
7. Why are these skills important for certain jobs? When and why would you need to use these skills?

### NOTES:

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# **Title of Activity: Change Three**

## **Type of Activity: Drama**

### **TIME NEEDED: 5-15 MINUTES**

Depending on the number of rounds played and the depth of discussion

### **SKILLS:**

- Memory for facts and information
- Recalling facts and information

### **PROJECT AND PURPOSE:**

Play a game about memorizing everything about your partner.

### **MATERIALS:**

- Open space

### **PROCEDURE:**

1. Explain that in drama, it is very important to learn everything possible about your fellow actors. It builds a level of comfort as well as trust. In this session, the group will participate in a drama exercise about memorizing everything about their partner.
2. Pair students and have them stand as they are able, facing each other.
3. Tell students to study everything about their partners from head to toe: what they wear, how their hair appears, their accessories, etc. Tell them they will have one whole minute to become an expert on their partner's appearance.
4. At the end of the minute, have partners turn back to back and tell them to each change three things about their appearance. It is their choice as to how subtle or how obvious they wish to be. A subtle change might be turning a ring upside down or rearranging a shirt collar. An obvious change might be removing one's shoes. Make sure nobody peeks at the changes being made by the partners. Give them one minute to make these changes.
5. At the minute call, have partners face each other and identify the changes.
6. Repeat the game with different partners, encouraging them to make different changes with increasing subtlety.
7. Ask partners to discuss how they decided the changes they wanted to make.

## CONNECTION CONVERSATION:

Discuss the activity using the following questions:

1. What was easy about this game? What was challenging? Why?
2. What strategies did you use to help you remember everything about your partner?
3. What process did you use to help yourself notice the changes? Explain in detail.
4. On some of the civil service tests, you will be required to demonstrate an ability to recall facts and information. How will this exercise help you do that?
5. What are some jobs that require the skills involved in this exercise?
6. Why are the skills used in this exercise important for certain jobs? When and why would you need to use these skills?

**NOTES:**

[illegible]

# **Title of Activity: Five Lines**

## **Type of Activity: Art**

**TIME NEEDED: 30 MINUTES**

### **SKILLS:**

- Advising and interacting with others
- Interpretation of photographs and diagrams

### **PROJECT AND PURPOSE:**

Pairs work together to create a drawing from five lines.

### **MATERIALS:**

- One piece of drawing paper per person
- Sets of two different colored markers (or colored pencils or crayons, etc.) per pair
- Flat surfaces for drawing

### **PROCEDURE:**

1. Explain that in this session, participants will work together in pairs to create a group drawing. A group drawing is a drawing by two or more people. It involves working together towards an end product, giving and taking, taking the lead and allowing oneself to follow depending on what is needed at the time.
2. Give each person a piece of paper and a marker, being sure each partner in the pair has a different color.
3. Each student will draw five (5) different lines that **DO NOT TOUCH** each other on his/her paper. The lines can be of any size or type (e.g., straight, curved, zig-zag, etc.), but they must not touch another line.
4. Have the students swap papers with their partners. They should keep their colored marker. Each person must use all five lines to create a drawing using only their own marker. It doesn't matter what the drawing is about as long as all five lines are part of the final product.
5. Give them 10 minutes to work on/complete their drawings.
6. When they are finished, ask students to share their drawings with their partners and ask if the end-product is what they expected and have them explain. Encourage them to concentrate on how the lines were used to create something and not to concentrate on how 'good' or 'bad' a drawing is.

## CONNECTION CONVERSATION:

Discuss the activity using the following questions:

1. How did this exercise demonstrate your ability to work with a team?
2. Was it easy or challenging to give up control of your picture? Explain.
3. Was it easy or challenging to work with material someone else provided? Why or why not?
4. What words, phrases, and tone of voice did you use to discuss the final product with your partner? Were they appropriate? Why or why not?
5. On some of the civil service exams, you will be required to demonstrate knowledge of appropriate ways to interact and communicate with others. How did this exercise help you work with those skills?
6. On some of the civil service exams, you will be required to demonstrate ability to interpret photographs and diagrams. How did this exercise help you work with those skills?
7. What are some jobs that require the skills involved in this exercise?
8. Why are these skills important for certain jobs? When and why would you need to use these skills?

**NOTES:**

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

# **Title of Activity: How to Look at Photographs**

## **Type of Activity: Art**

**NOTE: FOLLOW THIS WITH THE “JUST THE FACTS” ACTIVITY.**

**TIME NEEDED: 30 MINUTES**

### **SKILLS:**

- Drawing conclusions from evidence
- Interpretation of photographs and diagrams

### **PROJECT AND PURPOSE:**

Participants use artists' methods to closely examine photographs.

### **MATERIALS:**

- Photographs

### **PROCEDURE:**

1. Begin the session by asking students what the common phrase “a picture tells a thousand words” means to them. Explain that in this session, they will practice looking at photographs for evidence using artists' techniques.
2. Discuss how much time people typically spend deeply examining photographs. Tell students that most people glance at photos, and even in museums, people usually only spend 10 seconds looking at photos or artwork on display.
3. Research shows that most people have very quick and emotional reactions to photos without looking at the details. Sometimes a photo is intended to elicit a response, but having this kind of reaction can result in misinterpretation of the details.
4. Explain (and perhaps write on the board) the four (4) categories art experts use when examining photographs:
  - Composition: What do we see in the picture? What don't we see in the picture? Consider things such as details of faces, blurred street signs, parts of objects out of the frame, etc.
  - Timeframe: What is the moment being captured? Consider things such as events, points in relationships, time of day, time of year, etc.
  - Setting: What is the location? How is the location made clear? What are the details to help you go beyond responding “inside” or “outside”?
  - Focal point: Where is our attention drawn? How does the photographer draw our eye to that point?

5. Ask students if they ever take the time to think about these four (4) categories. Why or why not? How have advances in technology and the constant accessibility of a camera (on our smartphones) changed the four artistic and intentional categories of thoughtful photography examination?
6. Ask students to discuss how this same strategy might apply to the skills they need in various civil service jobs and positions.
7. Explain that most photographs have two interpretations: explicit and implicit.
  - Explicit: the photograph clearly communicates who, what, when, and where.
  - Implicit: the viewers make assumptions or inferences (educated guesses) about who, what, when, and where, and why the details might be important to know.
8. Tell students that they are going to look at some typical photographs and show photograph #1.
  - Ask students to look deeply at the picture for composition, timeframe, setting, and focal point. They should defend their responses with direct references to the photograph. Have them take notes on their observations.
  - What is the explicit interpretation of the photograph? How do you know?
  - What is the implicit interpretation of the photograph? How do you know?
9. Why is it important to consider the explicit and implicit interpretations of photographs?
10. Go through the same process with at least two more photographs

## CONNECTION CONVERSATION:

Discuss the activity using the following questions:

1. What was easy about this activity? What was challenging? Why?
2. On some of the civil service exams, you will be required to demonstrate an ability to draw conclusions from evidence. How will these steps help you do that?
3. On some civil service exams, you will be required to demonstrate an ability to interpret photographs and drawings. How will these steps help you do that?
4. What are some jobs that require the skills involved in this exercise?
5. Why are these skills important for certain jobs? When and why would you need to use these skills?

## NOTES:

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# Title of Activity: **Just the Facts**

## Type of Activity: **Art/Drama**

**NOTE: DO THIS LESSON AFTER THE “HOW TO LOOK AT PHOTOGRAPHS” LESSON.**

**TIME NEEDED: 45 MINUTES**

### **SKILLS:**

- Drawing conclusions from evidence
- Interpretation of photographs and diagrams
- Organizing

### **PROJECT AND PURPOSE:**

Participants role play characters to interpret photographs and draw conclusions.

### **MATERIALS:**

- Photographs
- Index cards
- Writing tools
- A board, wall, or chart on which to tape/tack index cards

### **PROCEDURE:**

1. Explain that this lesson will combine the skills learned in the “How to Look at Photographs” lesson and some drama role playing. Every member of the class will play a role in the brief scenarios that they will create about their photographs.
2. Review the four (4) categories for examining a photograph:
  - **Composition:** What do we see in the picture? What don't we see in the picture? Consider things such as details of faces, blurred street signs, parts of objects out of the frame, etc.
  - **Timeframe:** What is the moment being captured? Consider things such as events, points in relationships, etc.
  - **Setting:** What is the location? How is the location made clear?
  - **Focal point:** Where is our attention drawn? How does the artist draw our eye to that point?
3. Review the definitions of **explicit** and **implicit** interpretations:
  - **Explicit:** the photograph clearly communicates who, what, when, and where.
  - **Implicit:** the viewers make assumptions about who, what, when, and where.

4. Form groups of three. In each group of three, there will be the **Police Officer**, the **Photographer**, and the **Organizer**.
  - a. The **Police Officer** uses the four categories for examining a photograph and asks questions of the **Photographer** about the photograph and makes observations. The police officer also tells the **Organizer** to write answers and observations on the index cards.
  - b. The **Photographer** is the expert on what is in the photograph and answers questions **ONLY** about what is in the photograph (in other words, the photographer was not a witness to the crime; the **Photographer** took a picture of the scene of the crime). The **Photographer** also points out details to the **Police Officer**.
  - c. The **Organizer** takes notes on the information and observations collected by the **Police Officer**, writes the facts on index cards – one fact per card – and arranges them on the board/wall/chart to help draw conclusions.
5. Ask group members to think about how they will play the roles they have been assigned. What will they do with their voices to indicate they are playing a role? How will their body language reflect their roles?
6. Give each group one photograph and have them determine the following:
  - a. The explicit information of each photograph.
  - b. At least three possible implicit assumptions about the photograph that might include:
    - What happened just before the picture was taken?
    - Where should they look for more information?
    - Why this happened?
7. Let them prepare their scenarios and information for about 15 minutes.
8. At the end of the preparation time, have each team present their observations and conclusions about the scene to the rest of the group.
9. Let the rest of the class ask questions that help clarify each team's conclusions.

### CONNECTION CONVERSATION:

1. What was easy about this activity? What was challenging? Why?
2. On some of the civil service exams, you will be required to demonstrate an ability to draw conclusions from evidence. How does this exercise help you do that?
3. On some civil service exams, you will be required to demonstrate an ability to interpret photographs and drawings. How does this lesson help you do that?
4. What are some jobs that require the skills involved in this exercise?
5. Why are these skills important for certain jobs? When and why would you need to use these skills?





# **Title of Activity: MacGyver**

## **Type of Activity: Drama**

**TIME NEEDED: 30 MINUTES**

### **SKILLS:**

- Advising and interacting with others
- Logical reasoning

### **PROJECT AND PURPOSE:**

Students role play “MacGyver” to create logical solutions to a problem using everyday objects.

### **MATERIALS:**

- Items from participants’ pockets, purses, backpacks, etc.
- Extra unusual items

### **PROCEDURE:**

1. Explain that in this drama exercise, everyone will pretend to be the character MacGyver from the television show of the same name. Discuss how MacGyver is a character who solves crimes and other assorted problems by using ordinary items. He prefers non-violence in every situation, and he’s smarter than most people in the areas of physical science and engineering. He is a truly creative person.
2. Tell participants to get an item out of their pockets, purses, or from the community.
3. Have group members select a partner to work with and determine who will be Partner A and Partner B.
4. Each person in each pair thinks of a silly problem, such as, “My socks keep falling,” or “There’s no more cheese spread at the grocery store!” Brainstorm more possibilities.
5. Add to that phrase, “And all I have is this (item from pocket/purse/from the community.)”
6. Partner A says his/her phrase out loud. (e.g., “My socks keep falling, and all I have is this bottle of salad dressing!”)
7. Partner B says his/her phrase out loud. (e.g., “There’s no more cheese spread at the grocery store, and all I have is this ponytail holder!”)
8. Partner A must create a logical—albeit a little odd—way to use his/her item to solve Partner B’s problem. Partner B must create a logical—albeit a little odd—way to use his/her item to solve Person A’s problem.

9. State solutions out loud (e.g., Partner A might say, “You can use my salad dressing and pour it on crackers, put them in the freezer for a little while so it hardens just a little, and then you’ll have a tasty snack that will remind you of cheese!”; Partner B might say, “You can take my ponytail holder, put it over your sock that falls down the most, roll the top of that sock down over the pony tail holder, and you will have at least one sock that stays up.”)
10. When the partners have solved their problems, have them share their solutions with the group.
11. Play several rounds of the games with different partners/objects. Offer objects from the collection of items you brought as well.

### CONNECTION CONVERSATION:

Discuss the activity using the following questions:

1. What was easy about this game? What was challenging? Why?
2. What strategies did you use to help think about a whacky, logical solution?
3. On some of the civil service exams, you will be required to demonstrate an ability to think logically. How does this exercise help you to do that?
4. On some of the civil service exams, you will be required to demonstrate an ability to advise and interact with others. How does this exercise help you to do that?
5. What are some jobs that require the skills involved in this exercise?
6. Why are these skills important for certain jobs? When and why would you need to use these skills?

### NOTES:

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# **Title of Activity: Objects Memory**

## **Type of Activity: Art**

**TIME NEEDED: 10-15 MINUTES DEPENDING ON THE DEPTH OF DISCUSSION**

### **SKILLS:**

- Drawing conclusions from evidence
- Interpretation of photographs and diagrams
- Memory for facts and information
- Recalling facts and information

### **PROJECT AND PURPOSE:**

The group creates a still life model and works on memorizing all items and locations of items.

### **MATERIALS:**

- Table
- Blanket or large piece of material to cover objects
- Objects from participants' pockets, purses, lunchboxes, backpacks, etc.
- Extra objects

### **PROCEDURE:**

1. Explain that still life is a form of art that depicts objects sitting on tables, desks, floors, etc. To do this, the artist needs a model, something to look at to put in the drawing or painting. Today, the group will create the model for the artist of a still life of STUFF.
2. Place table in the middle of the working space. Ask participants to pull an object out of their pockets, purses, lunchboxes, backpacks, etc. Encourage them to find objects that are a little unusual (usual would be a cell phone or keys; unusual would be a half-eaten sandwich in a bag or a whistle).
3. Have participants place objects in a designated space on the table. Let the group work together to arrange the objects artistically. Imagine an artist is going to paint this collection of items.
4. Ask group to gather around the objects and study everything about what they see from the different points of view: the items, the colors represented, the numbers of items, the location of each item, what they CAN see and what the CANNOT see from their perspective, etc. Give them one minute for this process.
5. While the group is memorizing, determine the questions you will ask. Consider using the following as well as your own questions:
  - a. How many \_\_\_\_\_ did you notice?
  - b. Where was the \_\_\_\_\_ ?

- c. What was to the right of the \_\_\_\_\_ ?
  - d. What object was the farthest away from the center?
  - e. Which object was closest to you?
  - f. What object was closest to the object you put on the table?
  - g. How many items were (name a color)?
  - h. What would an artist use as the focal point? Why?
6. Cover the objects with the blanket/cloth and ask your questions. Do not remove the cover until you have completed all the questions on your list.
  7. Remove the cover and have members "check their answers."
  8. Tell group to turn around/face away from the objects on the table. Rearrange at least two objects and ask them to turn around and identify the changes.
  9. Ask students how they might approach a grouping like this if it were evidence to an incident or crime.

### CONNECTION CONVERSATION:

Discuss the activity using the following questions:

1. What was easy about this game? What was challenging? Why?
2. What strategies did you use to help you remember everything about the objects on the table?
3. What process did you use to help yourself notice the changes? Explain in detail.
4. On some of the civil service exams, you will be required to demonstrate an ability to recall facts and information. How will this exercise help you do that?
5. On some of the civil service exams, you will be required to demonstrate an ability to interpret photographs and diagrams. How will this exercise help you do that?
6. On some of the civil service exams, you will be required to demonstrate an ability to draw conclusions from evidence. How will this exercise help you do that?
7. What are some jobs that require the skills involved in this exercise?
8. Why are these skills important for certain jobs? When and why would you need to use these skills?

### NOTES:

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# **Title of Activity: One Line at a Time**

## **Type of Activity: Art**

**TIME NEEDED: 20 MINUTES**

### **SKILLS:**

- Advising and interacting with others
- Organizing

### **PROJECT AND PURPOSE:**

Pairs create a picture alternating drawing one line at a time.

### **MATERIALS:**

- One piece of paper per pair
- Sets of two different colored markers per pair
- Flat surfaces

### **PROCEDURE:**

1. Explain that in this session, participants will create art in pairs. The main goal is to work together as a team to complete a picture.
2. Discuss the skills you need to have to work as a team.
  - a. What are the best ways to talk to other team members? Why?
  - b. What helps a team complete a project without arguing?
  - c. What does each member of the team need to do and say to support their fellow team members?
  - d. What are some ways to appropriately give advice to other team members?
3. Have students select partners and give each set of partners one piece of paper and two (2) different colored markers. Have partners sit next to each other at a flat surface and place the paper between them.
4. Tell the pairs to figure out who will be Person A and who will be Person B. Each team will have three (3) minutes to create a drawing of a unique, fictional character one line at a time.
5. Person A draws a line of any kind on the paper. Person B waits until Person A finishes drawing and lifts his/her marker off the paper. Person B draws another line. Person A waits until Person B finishes drawing and lifts his/her marker off the paper. This pattern continues until lines connect and the shape of a character begins to form on the page.
6. Coach students that as soon as they begin to see the character on the page that they should begin to draw their lines faster, but the same rule remains: each person must wait until the other person lifts his/her marker off the page before drawing.

7. At the end of three (3) minutes, call time and drawing stops. Ask the pairs to talk about what they notice about their pictures, paying close attention to the shapes.
8. The next step is to name the character – one letter at a time. Using the same pattern as used to create the drawing, ask pairs to write one letter at a time across the bottom of the page to invent a unique name for the character.
9. When the characters are done and named, have partners work together to build a brief description of the character. What does the character do for work and for fun? What is the character's top quality? Where does the character live?
10. Have the pairs present their character drawings to the class.

### CONNECTION CONVERSATION:

Discuss the activity using the following questions:

1. What was easy about this game? What was challenging? Why?
2. Talk about the concept of control. Did anyone have control of this project? Explain your answer.
3. How did you feel about having another person draw on your drawing?
4. How did this exercise demonstrate your ability to work with a team?
5. What strategies did you use to help you communicate well with your partner?
6. On some of the civil service exams, you will be required to demonstrate knowledge of appropriate ways to interact and communicate with others. How did this game help you work with those skills?
7. On some of the civil service exams, you will be required to demonstrate knowledge of organizing skills. How did this game help you work with those skills?
8. What are some jobs that require the skills involved in this exercise?
9. Why are these skills important for certain jobs? When and why would you need to use these skills?

### NOTES:

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# **Title of Activity: Pass the Picture**

## **Type of Activity: Art**

**TIME NEEDED: 20 MINUTES**

### **SKILLS:**

- Advising and interacting with others
- Providing good customer service

### **PROJECT AND PURPOSE:**

Participants work as a team to create a picture together.

### **MATERIALS:**

- Paper
- Pencils/erasers
- Coloring implements (crayons, markers, etc.)
- Tables, around which students can sit in chairs

### **PROCEDURE:**

1. Explain that in this session, participants will create art in table teams. The main goal is to work together as a team to complete a picture.
2. Discuss the skills you need to have to work as a team.
  - a. What are the best ways to talk to other team members? Why?
  - b. What helps a team complete a project without arguing?
  - c. What does each member of the team need to do and say to support their fellow team members?
  - d. What are some ways to appropriately give advice to other team members?
3. Break the class into groups of 5-6. This activity works best if students sit next to each other around a table, but if this is not possible, they should sit in groups, each with a flat surface. Give each person a piece of paper and a pencil and ask them to write their initials in small letters on the back of the paper.
4. Explain that today's activity is called "Pass the Picture." For two minutes, each person will draw something based on a suggestion of the teacher/facilitator (NOTE: this could focus on a story, an event that might happen in the civil service career of choice, a depiction of a local activity or event, etc.). At the end of the two-minutes, each person will 'pass the picture' to the person on the right.
5. This person will take a few moments to look at the picture, and then add to the drawing, taking care not to change anything that is already on the paper. Keep everything and add more – more details, more characters, more background items, etc. This step should take two minutes.

6. Continue this process until every person at the table has added to each picture and eventually gets back his/her original drawing.
7. Take a few moments to review the drawing. How did the other artists add to your picture? Did having other artists contribute to your drawing change your original intention? If so, how? If not, why do you think that is so? How do you feel about people adding their ideas to your original picture? How is this like working as a team to complete a task?
8. Take a few moments to add details and/or color to your drawing. You may not change anything that was added, you may only add to it.

### CONNECTION CONVERSATION:

Discuss the activity using the following questions:

1. What was easy about this game? What was challenging? Why?
2. How did you feel about people drawing on your drawing?
3. How did this exercise demonstrate your ability to work with a team?
4. What strategies did you use to help you communicate well with your team members?
5. On some of the civil service exams, you will be required to demonstrate knowledge of appropriate ways to interact and communicate with others. How did this game help you work with those skills?
6. Why are these skills important for certain jobs? When and why would you need to use these skills?
7. What are some jobs that require the skills involved in this exercise?
8. On some of the civil service exams, you will be required to demonstrate knowledge of how to provide good customer service. In this game, who was the customer? Who was the civil servant? How did this game prepare you to use good customer service skills? How will this exercise help you to do that?

### NOTES:

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# **Title of Activity: Picture Memory**

## **Type of Activity: Game**

**TIME NEEDED: 10-15 MINUTES DEPENDING ON THE DEPTH OF DISCUSSION**

### **SKILLS:**

- Drawing conclusions from evidence
- Interpretation of photographs and diagrams
- Memory for facts and information
- Recalling facts and information

### **PROJECT AND PURPOSE:**

Participants work to remember items that appear in a picture.

### **MATERIALS:**

- Picture provided (can be used as slide)
- Means to display picture (SmartBoard, Overhead, copies/handout, etc.)

### **PROCEDURE:**

1. Discuss working memory with the group: working memory is the ability to hold things in your mind and rearrange those things to create understanding. Remind them that short term memory is retrieval, being able to remember things as they were. Working memory is retrieving the image or information and then manipulating it in your head. Working memory improves short term memory as well as critical thinking skills.
2. Post the picture where everyone in the group can see and ask the group to study every detail about the picture: the items, the colors represented, the numbers of items, the location of each item, etc.
3. Take the picture down and ask the group the following:
  - a. What did you see?
  - b. How many \_\_\_\_\_ did you notice?
  - c. Where was the \_\_\_\_\_ ?
  - d. What was to the right of the \_\_\_\_\_ ?
  - e. What object was the farthest away from the center?
  - f. Which object was closest to you?
  - g. How many items were (name a color)?
4. Explain that they will now practice using their working memory. You will ask them to “rearrange” the items in their minds. Use the following questions as well as your own to help guide you through this process:

- ## CONNECTION CONVERSATION:

1. What was easy about this game? What was challenging? Why?
2. What strategies did you use to help you remember everything about the objects on the table?
3. What process did you use to help yourself imagine the changes? Explain in detail.
4. On some of the civil service exams, you will be required to demonstrate an ability to recall facts and information. How will this exercise help you do that?
5. What are some jobs that require the skills involved in this exercise?
6. Why is this skill important for certain jobs? When and why would you need to use this skill?
7. How will this skill help you to interpret photographs and diagrams? Why is that skill important?

[illegible]



# **Title of Activity: Rules and Regulations**

## **Type of Activity: Games, Art**

**TIME NEEDED: 45 MINUTES**

### **SKILLS:**

- Interpretations of rules, regulations, and instructions
- Interpreting and following directions

### **PROJECT AND PURPOSE:**

Participants analyze game rules and create an original game based on Civil Service job rules, regulations, procedures, and directives.

### **MATERIALS:**

- Board games intended for very young children such as Chutes and Ladders, Uncle Wiggly, Candy Land, etc.
- Challenging games for older players such as any of the Cranium games, Quiddler, Monopoly, etc.
- Art supplies

### **PROCEDURE:**

1. Begin by asking why games have rules. When are rules and regulations helpful? When are they bothersome?
2. Ask the group if they have ever been playing a game and someone wanted to cheat. What happened? How did that affect the experience?
3. Where else do we find rules? Why are they there?
4. Bring out the board games for very young children and discuss the goal of the game and the rules. How does one win? How does one lose? How are the rules explained? Are they simple or complex? Why? Why are the rules important to the game? What do young children learn from these games? Point out that Chutes and Ladders is a particularly good game to use as a model because the game itself is about how when a player lands on a spot where people demonstrate following rules, they tend to win the game faster than when you land on a spot that shows people breaking the rules.
5. Bring out some of the more challenging games and discuss the goal of each game and the simplicity or the complexity of the rules. How are the rules enforced in the game?
6. Explain that in different civil service positions, they will be required to know the rules and follow the rules as well as communicate rules to others and enforce rules. These also are known as procedures and directives.
7. Have the group brainstorm a list of rules, regulations, procedures, and directives they may be asked to follow, communicate, and/or enforce in any one of the civil service positions they are studying.

8. Tell the group they are going to work with a partner to create a board game to teach people about rules, regulations, procedures, and directives appropriate to their field of study. Their game should have a goal, a board, directions to follow, and be playable in under 20 minutes.
9. Give the group a set amount of time to create and experiment with their games.
10. Consider having them teach other groups how to play the game or have a game time where everyone plays each other's games.

## CONNECTION CONVERSATION:

Discuss the activity using the following questions:

1. What was easy about this activity? What was challenging? Why?
2. What did you need to know about the rules and regulations and procedures and directives in your field of study to create this game?
3. What strategies did you use to help create your game?
4. On some of the civil service exams, you will be required to demonstrate an ability to interpret and follow directions. How will this exercise help you to do that?
5. On some of the civil service exams, you will be required to demonstrate an ability to interpret rules, regulations, and instructions. How will this exercise help you to do that?
6. What are some jobs that require the skills involved in this exercise?
7. Why is this skill important for certain jobs? When and why would you need to use this skill?

## NOTES:

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# **Title of Activity: Spelling Words Backwards**

## **Type of Activity: Games**

**TIME NEEDED: 10-15 MINUTES DEPENDING ON THE DEPTH OF DISCUSSION**

### **SKILLS:**

- Clerical operations with letters
- Memory for facts and information
- Organizing
- Recalling facts and information

### **PROJECT AND PURPOSE:**

Working in pairs, players listen to a list and rearrange letters.

### **MATERIALS:**

- Slide of words
- Means to project the slide

### **PROCEDURE:**

1. Discuss working memory with the group: working memory is the ability to hold things in your mind and rearrange those things to create understanding. Remind them that short term memory is retrieval, being able to remember things as they were. Working memory is retrieving the image or information and then manipulating it in your head.
2. Create pairs. Have one person sit/stand with back to the screen—this will be Person A. Have the partner—Person B—face the screen. Make sure pairs are scattered around the room to help with sound control.
3. Explain that they will now practice using their working memory and their spelling skills. You will ask them to “rearrange” letters in two-letter words in their minds.
4. Post the slide to the person facing the screen (Person B) and have him say one of the two-letter words on the slide to Person A. Person A’s task is to spell the word backwards. Person B should go through all the words in random order on the slide for Person A to spell backwards.
5. Have partners switch roles for the second slide (Person A will read the word, Person B will spell it backwards)..

## CONNECTION CONVERSATION:

Discuss the activity using the following questions:

1. What was easy about this game? What was challenging? Why?
2. What strategies did you use to help you spell the work backwards?
3. On some of the civil service tests, you will be required to demonstrate an ability to recall facts and information. How will this exercise help you do that?
4. What are some jobs that require the skills involved in this exercise?
5. Why is this skill important for certain jobs? When and why would you need to use this skill?
6. On some of the civil service tests, you will be required to demonstrate an ability to spell words correctly and find misspellings. How will this exercise help you to do that?
7. On some of the civil service tests, you will be required to demonstrate an ability to organize words and portions of words. How will this exercise help you to do that?

**NOTES:**

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper has a slight shadow on its right side, suggesting it's resting on a surface.

## **Variation: Slide 1**

**Person B says... “Do”**

**Person B says... “Me”**

**Person B says... “Hi”**

**Person B says... “To”**

**Person B says... “It”**

## **Variation: Slide 2**

**Person A says... “As”**

**Person A says... “Up”**

**Person A says... “La”**

**Person A says... “If”**

**Person A says... “Be”**

# Title of Activity: Story Sequence

## Type of Activity: Drama

**TIME NEEDED: 20 MINUTES OR MORE DEPENDING ON THE DISCUSSION**

### SKILLS:

- Advising and interacting with others
- Reading comprehension: sequencing

### PROJECT AND PURPOSE:

Participants use drama technique called tableau to create scenes from stories and put them in sequential order.

### MATERIALS:

- Open space
- Events from a children's story written on index cards (possibilities are included at end of lesson)
- Fairy tales/children's stories

### PROCEDURE:

1. Explain that in drama, there is a technique called "Tableau." People use their bodies to create a picture of an event in a story. They play the characters and the setting pieces. For example, if a group wanted to create a tableau of the marketplace scene in ALLADIN, some people would become the tents and the stands, another person would be the magic carpet, and others would play the characters in the scene. Everyone would freeze in place, making sure to use their facial expressions to show the emotions of the characters they represent.
2. Tell participants that one of the skills they must be able to do on the exam is read a passage and put the events in order. This is called sequencing. In this session, they will use the drama skill of tableau to create the scenes in a story, and then they will sequence their different tableau.
3. Have students break into small groups of two, three, or four people. Have them practice forming a tableau of a nursery rhyme such as "Hickory, Dickory Dock."

Hickory, dickory dock!  
The mouse ran up the clock!  
The clock struck one,  
And down he run.  
Hickory, dickory dock!

What would need to be in the tableau? Who is/are the character/s? How would they use their bodies to show the things and the characters? Have each group create a tableau of the story. Encourage them to think about the details of the nursery rhyme such as the time on the clock, how to freeze the action of the mouse, the emotion on the mouse's face, etc.

4. When finished, explain that you will give each group an event from a famous children's story. Each group will have three minutes to create a tableau of the event on their card.
5. At the end of the three minutes, each group will present its tableau. When all the groups have presented, have the class sequence the events: put them in order of how they know the story.
6. If time permits, try with a second story set.
7. If time permits, try with a set of instructions for a task that would appear on a civil service exam.

## CONNECTION CONVERSATION:

Discuss the activity using the following questions:

1. What was easy about this drama experience? What was challenging? Why?
2. What strategies did you use to create the tableau?
3. How would you rate your abilities to work together toward the goal of creating the tableau?
4. On some of the civil service tests, you will be required to demonstrate an ability to read and sequence events. How will this exercise help you to do that?
5. What are some jobs that require the skills involved in this exercise?
6. On some of the civil service tests, you will be required to demonstrate an ability to advise and interact with others. How will this exercise help you to do that?

**NOTES:**

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins or other markings on the paper.

# Story Event Suggestions: Story 1

**NOTE: YOU DO NOT NEED TO USE ALL OF THE PLOT POINTS; SELECT AS YOU SEE FIT.**

The mother pig tells her three pigs they must leave home to find their fortunes.

The first pig builds his house of straw.

The Big Bad Wolf huffs and puffs and blows the house of straw down. The first pig runs to the second pig's house.

The second pig builds his house of sticks.

The Big Bad Wolf huffs and puffs and blows the house of sticks down. The first and second pigs run to the third pig's house.

The third pig is a smart pig and builds his house of bricks.

The two pigs arrive at the third pig's brick house and plan for the arrival of the Big, Bad Wolf.

The Big Bad Wolf tries to blow the house down but cannot.

The Big Bad Wolf tries to slide down the chimney, but the three pigs have a roaring fire and a cauldron of hot water waiting for him.

The Big Bad Wolf runs away in pain and the three pigs celebrate.

# Story Event Suggestions: Story 2

**NOTE: YOU DO NOT NEED TO USE ALL OF THE PLOT POINTS; SELECT AS YOU SEE FIT.**

The three bears realize their porridge is too hot, so they go out for a walk until it cools down.

A little girl enters the empty house.

The little girl tastes each of the bowls of porridge. The first is too hot, the second is too cold, but the third is just right and she eats it up.

The little girl tries the chairs in the den. The first is too hard, the second is too soft, but the third is just right. She sits in the chair and breaks it to pieces.

She goes to the bedroom and tries each of the beds. The first is too hard, the second is too soft, but the third is just right. She climbs in the bed and falls asleep.

The bears return home to find their door open.

The bears find their food has been tasted, and the baby bear is upset that his/her porridge is eaten.

The bears find that someone has sat in their chairs, and the baby bear is upset that his/her chair is broken.

The bears go to the bedroom to find that not only has someone tried all of their beds, but there is a girl asleep in the baby bear's bed.

The little girl wakes up and runs out of the house as quickly as her feet can carry her. The bears have no other choice but to clean up after her.

# **Title of Activity: Telephone**

## **Type of Activity: Game**

**TIME NEEDED: 15 MINUTES**

### **SKILLS:**

- Advising and interacting with others
- Interpreting and following directions
- Memory for facts and information
- Providing good customer service

### **PROJECT AND PURPOSE:**

Whole group plays a game of “Telephone.”

### **MATERIALS:**

- Chairs in a circle

### **PROCEDURE:**

1. Explain that in this session, the group will play a game that will require them to use their interaction skills, their memory skills, and interpreting and following directions. Note: Facilitator can choose to focus on one or all the skills.
2. Have students sit in a circle and ask if anyone knows what a telephone is, how it works, and how it compares/contrasts to mobile or cell phones.
3. Explain that in the early years of telephone, people had to dial the operator to be connected to another person’s phone. There was always the chance the operator could listen in to any phone call. How would this be helpful? How would this be a problem? Is there any practice like this that involves current technology? Explain.
4. Tell students that they are going to play a game of “Telephone.” One person thinks of a brief story or statement and whispers it in the ear of the person on his/her right. The person who has just heard the story must memorize it, turn to the next person on the right, and whisper the same story.
5. Offer the “Operator” rule: if you cannot remember what the person has whispered in your ear, you can say, “Operator!” and the person will repeat the whisper story. Each listener can only say, “Operator!” once.
6. Continue until the story has gone all the way around the circle. The last person to hear the story/ statement says it aloud, and then the first person tells what the original story was.
7. Have the group compare and contrast the original story to the final version. How, if at all, did it change? Why would this happen?
8. Have students change seats and play another round of the game to compare and contrast the results.

## CONNECTION CONVERSATION:

Discuss the activity using the following questions:

1. What was easy about this activity? What was challenging? Why?
2. How did you use your memory skills?
3. How did you use interaction skills?
4. How well were you able to memorize and follow directions?
5. How is this a game about good customer service?
6. On some of the civil service tests, you will be required to demonstrate an ability to do any of the above. How will this exercise help you do that?
7. What are some jobs that require the skills involved in this exercise?
8. Why are these skills important for certain jobs? When and why would you need to use any or all of these skills?

**NOTES:**

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

# **Title of Activity: Three-Letter Words**

## **Type of Activity: Game**

**TIME NEEDED: 10-15 MINUTES DEPENDING ON THE DEPTH OF DISCUSSION**

### **SKILLS:**

- Clerical operations with letters
- Memory for facts and information
- Recalling facts and information
- Spelling

### **PROJECT AND PURPOSE:**

Working in pairs, players listen to a list and rearrange letters into words.”

### **MATERIALS:**

- Slides of letter groupings
- Means to project the slide

### **PROCEDURE:**

1. Discuss working memory with the group: working memory is the ability to hold things in your mind and rearrange those things to create understanding. Remind them that short term memory is retrieval, being able to remember things as they were. Working memory is retrieving the image or information and then manipulating it in your head.
2. Create pairs. Have one person sit/stand with back to the screen (this will be Person A). Have the partner (Person B) face the screen. Make sure pairs are scattered around the room to help with sound control.
3. Explain that they will now practice using their working memory and their spelling skills. You will ask them to rearrange groups of three letters into words.
4. Post the slide to the person facing the screen (Person B) and have him say the set of letters on the slide to Person A. Person A's task is to say and spell at least one word that can be created from the set; if there is more than one word that can be created, do so. Person B should go through all the letter sets in random order on the slide for Person A to say/spell.
5. Have partners switch roles for the second slide (Person A will read the letter set, Person B will say and spell at least one word).
6. Use the following questions as well as your own to help guide you through this process.

## CONNECTION CONVERSATION:

Discuss the activity using the following questions:

1. What was easy about this game? What was challenging? Why?
2. What strategies did you use to help you create words?
3. On some of the civil service tests, you will be required to demonstrate an ability to recall facts and information. How will this exercise help you do that?
4. What are some jobs that require the skills involved in this exercise?
5. Why is this skill important for certain jobs? When and why would you need to use this skill?
6. On some of the civil service tests, you will be required to demonstrate an ability to spell words correctly and find misspellings. How will this exercise help you to do that?
7. On some of the civil service tests, you will be required to demonstrate an ability to organize words and portions of words. How will this exercise help you to do that?

**NOTES:**

This image shows a single page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page, leaving small margins at the top and bottom. There are no vertical margin lines, text, or other markings on the page.

## **Variation: Slide 1**

**Person B says... A-T-R**

**Person B says... W-N-O**

**Person B says... T-P-A**

**Person B says... A-E-R**

**Person B says... I-P-G**

## **Variation: Slide 2**

**Person A says... F-R-A**

**Person A says... U-T-B**

**Person A says... A-D-B**

**Person A says... T-C-O**

**Person A says... E-G-L**

# **Title of Activity: Three Numbers**

## **Type of Activity: Game**

**TIME NEEDED: 10-15 MINUTES DEPENDING ON THE DEPTH OF DISCUSSION**

### **SKILLS:**

- Clerical operations with numbers
- Memory for facts and information
- Recalling facts and information

### **PROJECT AND PURPOSE:**

Working in pairs, players listen to a list and rearrange numbers in a designated order.

### **MATERIALS:**

- Slides of number groupings
- Means to project the slide

### **PROCEDURE:**

1. Discuss working memory with the group: working memory is the ability to hold things in your mind and rearrange those things to create understanding. Remind them that short term memory is retrieval, being able to remember things as they were. Working memory is retrieving the image or information and then manipulating it in your head.
2. Create pairs. Have one person sit/stand with back to the screen (this will be Person A). Have the partner (Person B) face the screen. Make sure pairs are scattered around the room to help with sound control.
3. Explain that they will now practice using their working memory and their number skills. You will ask them to rearrange groups of three numbers into value and reverse value order (value—smallest to largest; reverse value—largest to smallest).
4. Post the slide to the person facing the screen (Person B) and have him say the set of numbers on the slide to Person A. Person A's first task is to say the number set in value order. Person A's second task is to say the number set in reverse order. Person B should go through all the number sets in random order on the Have partners switch roles for the second slide (Person A will read the number set, Person B will say the value/reverse value order).
5. Use the following questions as well as your own to help guide you through this process.

## CONNECTION CONVERSATION:

Discuss the activity using the following questions:

1. What was easy about this game? What was challenging? Why?
2. What strategies did you use to help you remember the value/reverse value order?
3. On some of the civil service tests, you will be required to demonstrate an ability to recall facts and information. How will this exercise help you do that?
4. What are some jobs that require the skills involved in this exercise?
5. Why is this skill important for certain jobs? When and why would you need to use this skill?
6. On some of the civil service tests, you will be required to demonstrate an ability to organize sets of numbers. How will this exercise help you to do that?

**NOTES:**

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

## **Variation: Slide 1**

**21-43-16**

**41-14-83**

**8-62-12**

**55-33-99**

**11-79-75**

## **Variation: Slide 2**

**9-24-60**

**52-73-86**

**91-31-61**

**44-22-77**

**66-46-26**

# **Title of Activity: Throw!**

## **Type of Activity: Game**

**TIME NEEDED: 10-15 MINUTES DEPENDING ON THE DEPTH OF DISCUSSION**

### **SKILLS:**

- Memory for facts and information
- Arithmetic computation without calculators

### **PROJECT AND PURPOSE:**

Participants play a math game that involves memory and computation.

### **MATERIALS:**

- Open space

### **PROCEDURE:**

1. The teacher will facilitate this game. This will require you to walk around the room, listening to the groups, giving clues, and checking their math.
2. Form small circles of four or five people. Have each person think of a number between one and 10. Behind their backs, each person should extend that number of fingers.
3. When the leader calls, "Throw!" each group member will put the number of fingers into the center of their small circles.
4. Give everyone 10 seconds to look at all the finger-numbers in the circle.
5. Tell group members to pull their hands behind their backs.
6. Challenge the members of the group to remember all the finger-numbers that were thrown as well as the person who "threw" each finger-number.
7. Create new groups and have members prepare by thinking of a number and creating "finger-numbers."
8. Have the group throw their finger-numbers into the center of their small circles, and after 10 seconds have them pull their hands behind their backs.
9. Call two names in each group and have the other members of the group use their memory to add the two numbers.
10. Repeat with the operations of subtraction, multiplication, and division.
11. Do the same game multiple times including in full group.

## CONNECTION CONVERSATION:

Discuss the activity using the following questions:

1. What was easy about this game? What was challenging? Why?
2. What strategies did you use to help you remember the numbers?
3. On some of the civil service tests, you will be required to demonstrate an ability to recall facts and information. How will this exercise help you do that?
4. What are some jobs that require the skills involved in this exercise?
5. Why is this skill important for certain jobs? When and why would you need to use this skill?
6. On some of the civil service tests, you will be required to demonstrate an ability to perform mathematical operations with numbers. How will this exercise help you to do that?

### NOTES:

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

# **Title of Activity: Trio Drawing**

## **Type of Activity: Art**

**TIME NEEDED: 30 MINUTES**

### **SKILLS:**

- Advising and interacting with others
- Interpreting and following directions
- Providing good customer service

### **PROJECT AND PURPOSE:**

Students work in teams of three to draw a picture based on famous works of art.

### **MATERIALS:**

- One piece of paper per trio
- Pencils/erasers
- Individual copies of artwork: photographs, prints, and famous works (select artwork based on the skill levels of your students)

### **PROCEDURE:**

1. Explain that in this session, participants will create art in teams of three. The main goal is to communicate appropriately, professionally, and politely with your team members. Team members will communicate instructions to complete a task.
2. Discuss what it means to communicate appropriately, professionally, and politely with co-workers. Discuss what it means when interacting with clients.
  - a. What tone of voice helps create open lines of communication?
  - b. What types of words help teams work together well?
  - c. How does our body language help us communicate clearly, appropriately, professionally, and politely?
3. Break the class into groups of three (3). One person is the Talker, one person is the Artist, and one person is the Silent Communicator. Arrange each team so the Silent Communicator is behind the back of the Artist, the Artist sits facing the Talker, and the Talker faces the Silent Communicator and Artist.
4. Give each Silent Communicator one of the photographs, prints, or copies of famous works of art. Silent Communicators do not show the artwork to anyone on their team. The Silent Communicator's job is to use gestures, facial expressions, and movement to communicate what is in the work of art.

5. The Talker's task is to interpret the movements of the Silent Communicator into words that describe what the Artist should draw.
6. The artist follows the Talker's instructions to draw a version of the team's work of art.
7. Give the teams five to eight minutes to recreate the work of art in their drawing.
8. At the end of the allotted time, let the teammates look at the product and discuss the process of the group drawing.
  - a. Comment on the communication process. What worked? What did not work? Why?
  - b. How could you improve the communication but still stay within the rules of the game?
  - c. What adjustments to the rules – other than allowing the silent communicator to speak – would make this process easier? Why?
9. Have teammates swap roles and work with a different work of art.

### CONNECTION CONVERSATION:

Discuss the activity using the following questions:

1. What was easy about this game? What was challenging? Why?
2. How did you work with the concept of communicating appropriately, professionally, and politely?
3. What strategies did you use to help you communicate well with your team members? How did you improve your communication with each new attempt at the exercise?
4. On some of the civil service tests, you will be required to demonstrate knowledge of appropriate ways to interact and communicate with others. How did this game help you work with those skills?
5. What are some jobs that require the skills involved in this exercise?
6. Why are these skills important for certain jobs? When and why would you need to use these skills?
7. On some of the civil service tests, you will be required to demonstrate knowledge of how to provide good customer service. In this game, who was the customer? Who was the civil servant? How did this game prepare you to use good customer service skills? How will this exercise help you to do that?

### NOTES:

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Head in the Clouds, by Georgia O'Keeffe



Delicate Tension. No. 85, 1923 by Wassily Kandinsky



The Scream, 1893 by Edvard Munch



Borderline Between Mexico and the United States (1932), by Frida Kahlo



Mona Lisa (c. 1503–06, perhaps continuing until c. 1517), by Leonardo da Vinci



Lawrence Jacob Self-Portrait (1977), by Jacob Lawrence

# Title of Activity: **Word Actors**

## Type of Activity: **Drama**

**TIME NEEDED: 30 MINUTES**

### **SKILLS:**

- Alphabetizing
- Categorizing
- Clerical operations with letters and numbers
- Organizing

### **PROJECT AND PURPOSE:**

Participants use pantomime skills to act out words and concepts for a “Clerk” to alphabetize, categorize, and organize.

### **MATERIALS:**

- Index cards with a variety of words that participants can act out using just their bodies (**Note:** Some cards are provided at the end of the lesson to cut apart)
- Open space

### **PROCEDURE:**

1. Explain that one of the main tools of drama is the body. Actions, gestures, and body position often communicate more than the words spoken. In today’s class, people will use their bodies to communicate words; everyone will act out, pantomime, or pretend to be whatever it is they are assigned.
2. Practice with the group by asking them to spread out so they each have individual space and have them use their bodies to become or communicate any/all of the following: a cat, a fork, a streetlight, a rug, happiness, temper tantrum, fishing. No sounds or words should be added.
3. Select one person as the Clerk and ask this person to wait on the sideline until you have given the other participants their instructions. The other participants will be the Word Actors.
4. Give each person a card with one of the words on it to act out. Tell everyone to think about how they will use their bodies—no voices—to communicate the word or words on their card. On the first try, the cards may be visible. When you say, “Three, two, one, action!” the Word Actors will begin.
5. The Clerk’s job is to direct the Word Actors to stand in alphabetical order. The Word Actors must continue to act out their words until all the words are in alphabetical order.
6. Check the work, and then collect the cards
7. Play a second round with a new Clerk.

8. Extensions/challenges for the game:
- a. Have the Word Actors keep their words secret. When the Clerk has alphabetized the group, have each Word Actor say the word on their cards. If the group needs to be rearranged, do so.
  - b. Have the Clerk organize the Word Actors into categories (e.g., put all the words that have something to do with the outdoors on one side of the room and all of the indoor items on the other; living vs. non-living things; things you would find in an office and things you would find in a restaurant; etc.). The clerk must explain his/her categorizing strategy.
  - c. Have the group think of other ways to organize and categorize the Word Actors.

### NOTE:

If participants are hesitant about acting out words, this game can also be played by:

- having the clerk alphabetize the members of the group by first name, last name, etc.
- having the Word Actors hold the word cards on their heads so the Clerk can see the words to move around.

### CONNECTION CONVERSATION:

Discuss the activity using the following questions:

1. What was easy about this game? What was challenging? Why?
2. What strategies did you use to help act out the words?
3. On some of the civil service tests, you will be required to demonstrate an ability to alphabetize. How will this exercise help you to do that?
4. On some of the civil service tests, you will be required to demonstrate an ability to categorize. How will this exercise help you to do that?
5. How did this game reflect the skills needed by a clerk? By any other professional? Why?

### NOTES:

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**TABLE**

**CLOTHESLINE**

**WATER FOUNTAIN**

**STAPLER**

**SCISSORS**

**SPATULA**

**ANGRY**

**DEPRESSED**

**TICKLISH**

**ROCK STAR**

**DRAGON**

**MOUSE**

**MOUSE**

**DOOR BELL**

**FLAG**

**TREE**

**HORSE**

**TELEVISION**

**BLANKET**

**CAR**

**AIRPLANE**

**MERRY-GO-ROUND**

**BALLOON**

**WATER**

**JELLO**

**EAGLE**

**PENGUIN**

**DINOSAUR**

**LIGHTENING**

**ROCK**

**SWING**

**JOYFUL**

**STUBBORN**

**BOSSY**

**IMPORTANT**

**SHY**

**SMELLY**

**FISH**

**SNAKE**

**ELEPHANT**

**LEAF**

**WAGON**

**BOOK**

**JUKEBOX**

**TAMALE**

**EXISTENTIALISM**

**CREDIT**

**DANCE**

**PLASTIC**

**RETROACTIVE**

**OFFICER**

**TOLL**

**FRENCH FRIES**

**PLACEBO**

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## SKILL BUILDING THROUGH MATH

# Title of Activity: **Back to Back Drawing**

## Type of Activity: **Math Vocabulary**

**TIME NEEDED: 15-20 MINUTES**

### SKILLS:

- Using vocabulary to effectively communicate with others.
- Collaboration

### PROJECT AND PURPOSE:

Participants work in pairs and attempt to describe a figure with the intention of having their partner accurately draw it.

### MATERIALS:

- Pictures. You can use a projector or print copies of each picture for the students.
- Blank paper and pencils
- Chairs

### PROCEDURE:

1. Explain to the students that they will be working in pairs to draw pictures that appear on the board. The purpose of the activity is to try to use as much vocabulary to accurately explain to their peer what to draw on their paper.
2. Students should be sitting back to back where one of the students is facing the board and the other is in the opposite direction.
3. Show the first image (easy) and provide students facing the board with 2 minutes to describe to their peer what to draw.
4. At the end of the 2 minutes have the students drawing show their partner the picture. Have them discuss how they can improve their communication for the next round (30 seconds) and then switch spots.
5. Show the second (more complex) image and allow students 3 minutes to describe this new image to their peers as the second person now draws. At the end of the 3 minutes have the drawer show the image to the describer and once again, discuss strategies to improve the next round. At this point you may choose to either (2 minutes):
  - Have each pair share out a strategy they discussed or
  - Have them share out some of the vocabulary they have been using that helps. Write it on the board to support struggling groups.

- Examples Include:
  - a.** Vertical/Horizontal
  - b.** Line vs. Line Segment
  - c.** Curve
  - d.** Midpoint/Vertex/Angle
  - e.** Equidistant (Equal Distance)
  - f.** Names of Shapes
  - g.** Perimeter/Area
  - h.** Quadrilateral

- 6.** Have the partners switch roles and provide them with an even more complex image (4 minutes). Remind them to try to use some of the strategies or vocabulary the group came up with prior to this round. At the end of the time, have each group show the final image and reflect on their progress. (See connecting conversation #1).

### CONNECTION CONVERSATION:

Discuss the activity using the following questions:

- 1.** Was your team more or less successful as you progressed through the images? Why or why not? (Think and write, then share.)
- 2.** What are some of the skills you worked on during this activity and why are they important?
- 3.** How does the use of proper terminology/vocabulary affect your ability to be successful in any given task?

### NOTES:

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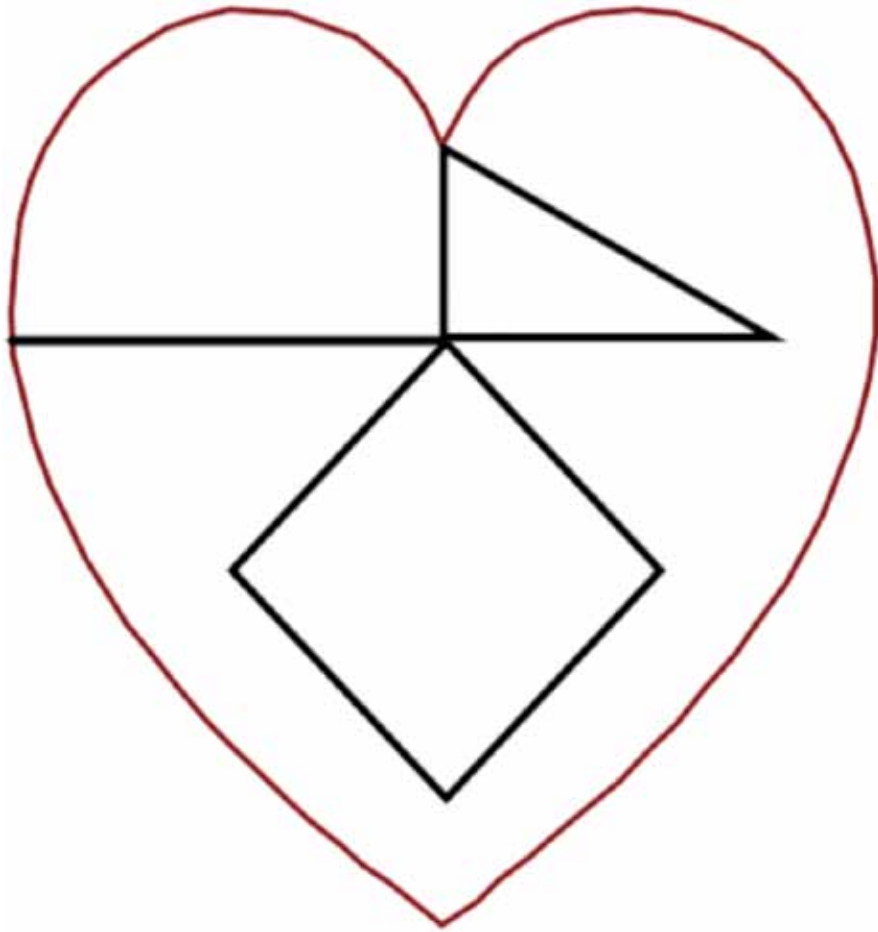
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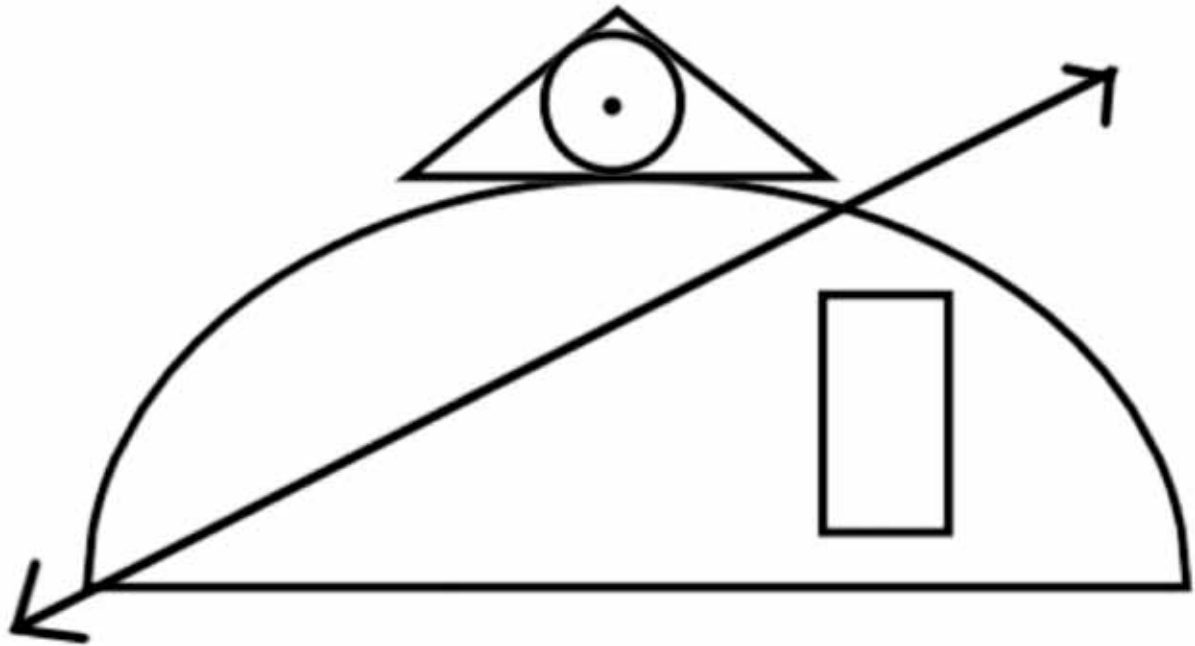
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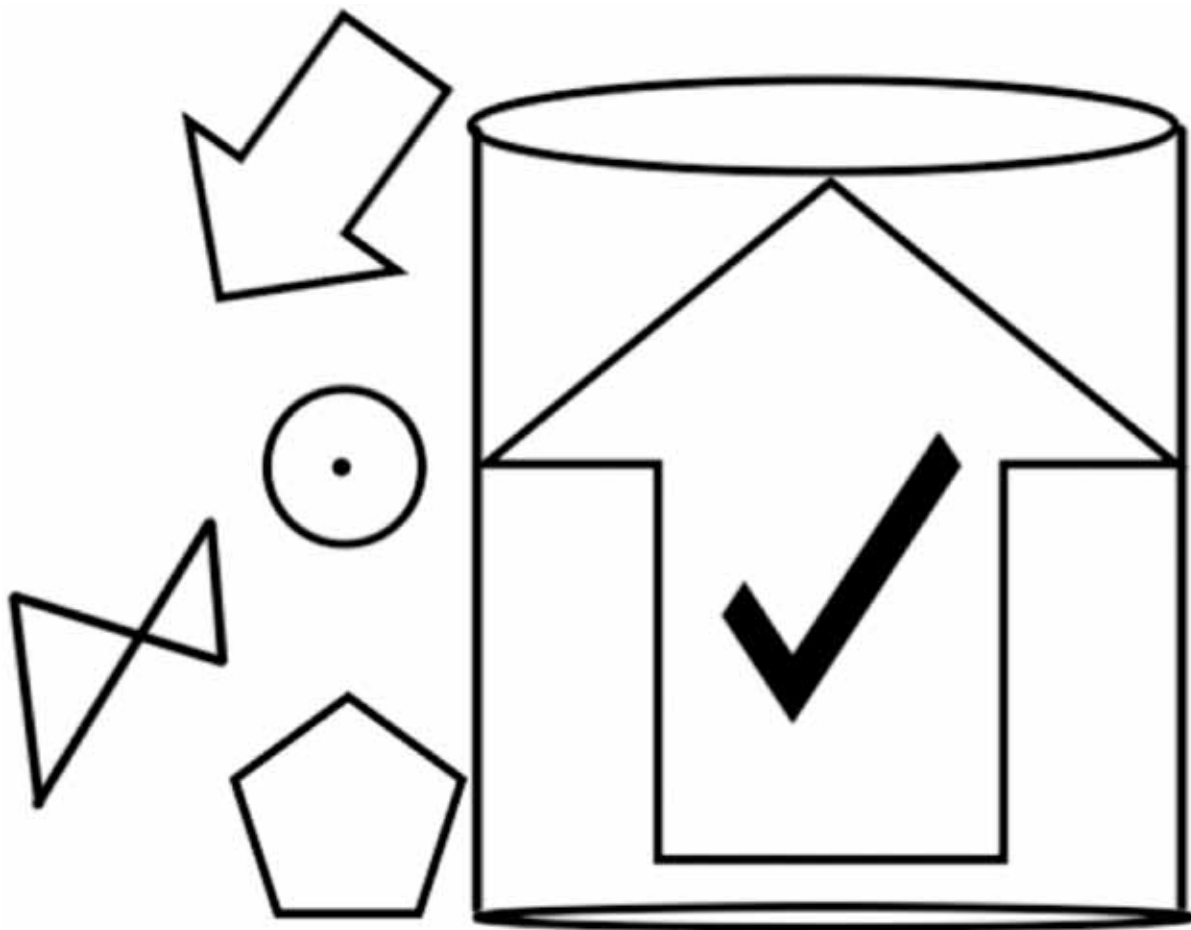
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## SKILL BUILDING THROUGH MATH

# Title of Activity: Growing Dots Pattern Task

## Type of Activity: Math

**TIME NEEDED: 45 MINUTES**

### SKILLS:

- Recognizing patterns and making generalizations
- Deducing potential outcomes from observations

### PROJECT AND PURPOSE:

Participants will collaborate in teams of four to make observations about the number of dots in a growing pattern. They will then use these observations to predict the number of dots in later figures and eventually generalize their observations to be able to predict for any potential figure. Teams will also create a poster for a gallery walk about what observations they made and what predictions they made.

### MATERIALS:

- Growing Dots Task Sheet Handout
- Poster paper
- Markers
- Post-its

### PROCEDURE:

1. Have students sit in teams of four and distribute the Growing Dots Pattern Task.
2. Tell students that their job is to make observations about the growing pattern and apply those observations to answer the questions that follow, as a team.
3. Note that Step 6 on the task sheet is to create a poster with their findings.
4. Students should be given 15 minutes to work out the solutions to the questions and 10 minutes to create their posters.
5. Once all students have completed their posters, hang them and give the instructions for a gallery walk. Be sure that all students are silent and write their comments and questions on post-its to attach to the poster of their choice. Allow students to circulate and review each other's work for 10 minutes.
6. Ask students to return to their teams and read the post-its that students placed on their poster. Teams should be given 5 minutes to discuss the feedback/questions they got from other teams.
7. The last 5 minutes is reserved for teams to do a "domino share" where one representative from each team shares one take away from the group discussion.

## CONNECTION CONVERSATION:

Discuss the activity using the following questions:

- What patterns do you notice?
- Where do you see that in the diagram?
- What do each of the numbers you are using represent in the context of the problem?

**NOTES:**

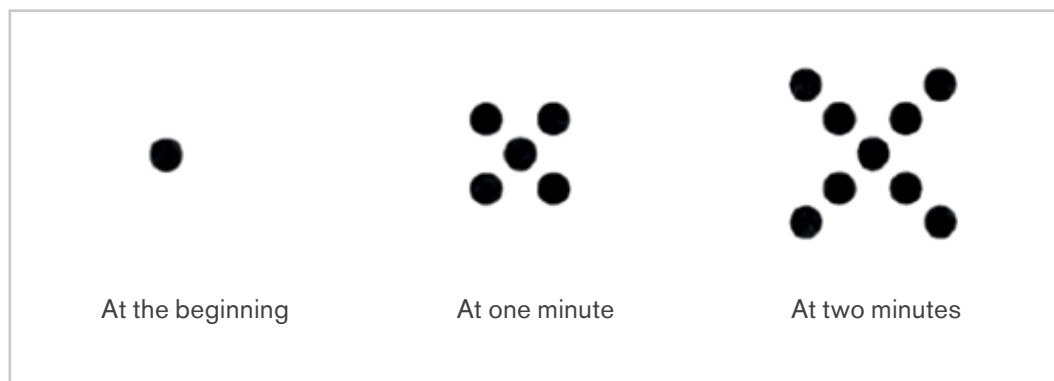
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## SKILL BUILDING THROUGH MATH

# Title of Activity: Growing Dots Pattern Task

## Type of Activity: Math

NAME: \_\_\_\_\_



### STEPS:

1. What patterns do you notice in the set of figures? Write them all down. There are no wrong answers!
2. Create a sketch of the next 2 figures in the sequence (at 3 minutes and 4 minutes). Be sure to apply your observations from step 1 when doing this.
3. How many dots are there in each of the figures you see in the pattern? What pattern do you notice?
4. Describe the figure after 20 minutes without drawing it. How many dots does it have?
5. Determine the number of dots in the figure after 100 minutes.
6. Determine an expression (formula) that generates the number of dots in the figure after a number of minutes. Explain why it works and relate it to your visual description of the pattern.
7. Create a poster of your findings from the first 6 steps.

## SKILL BUILDING THROUGH MATH

# Title of Activity: **Is the Game Fair?**

## Type of Activity: **Math**

**TIME NEEDED: 15-20 MINUTES**

### SKILLS:

- Analyzing a game and predicting the probability of a winner.
- Constructing an argument, supporting a claim

### PROJECT AND PURPOSE:

Participants in pairs and attempt to analyze the rules of a game in order to determine whether or not it is fair.

### MATERIALS:

- Number cubes
- Paper
- Chairs

### PROCEDURE:

1. Students should be seated in pairs and given two number cubes. The following instructions should be read to the class: "Each player rolls a number cube. Of the two numbers showing the smaller is subtracted from the larger. If the difference is 0, 1, or 2, player A gets 1 point. If the difference is 3, 4, or 5, Player B gets 1 point. This continues for 12 rounds and the winner is the player with the most number of points." Allow students to play the game for five minutes.
2. Tell pairs to raise their hands if Player A won. Then ask the students to raise their hand if Player B won. Ask students what they notice. Player A should have won more frequently.
3. After playing, give students five minutes to discuss with their teammate if this game was fair to both players and create an argument, supporting their claim. Provide students that are struggling with the graphic organizer provided that may help to organize the potential outcomes when you roll both cubes.
4. In the last 5-10 minutes, have each team share out their findings/argument. Be sure that all students are listening to their speaker so they can respond if they disagree with the speaker.

### CONNECTION CONVERSATION:

Discuss the activity using the following questions:

- Is it equally likely that Player A and player B will win?
- How much more likely would it be for the one player to win instead of the other?
- How many different ways can I earn a point as player A?

# Graphic Organizer (Scaffold)

NAME: \_\_\_\_\_

| Differences | 1 | 2 | 3 | 4 | 5 | 6 |
|-------------|---|---|---|---|---|---|
| 1           |   |   |   |   |   |   |
| 2           |   |   |   |   |   |   |
| 3           |   |   |   |   |   |   |
| 4           |   |   |   |   |   |   |
| 5           |   |   |   |   |   |   |
| 6           |   |   |   |   |   |   |

## SKILL BUILDING THROUGH MATH

# Title of Activity: **Monster Mash**

## Type of Activity: **Math**

**TIME NEEDED: 20-30 MINUTES**

### SKILLS:

- Using deductive reasoning to generalize a pattern.
- Collaboration

### PROJECT AND PURPOSE:

Participants will collaborate in teams of four to determine the number of table necessary to seat a group of 19 individuals. They will then attempt to generate a formula for any number of seats.

### MATERIALS:

- Task and extension
- Chart paper
- Markers
- (Optional) Manipulatives: small squares for students to work with during the activity.

### PROCEDURE:

1. Place students in groups of three.
2. Handout the activity and give students a few minutes to read through the task and ask any clarifying questions.
3. Once all clarifying questions have been answered allow students 15 minutes to work through the task and record their work on the handout. Provide manipulatives for any groups of students that need the additional support.
4. During the last 5 minutes of work time invite each group to begin to write some of their findings and observations on their sheet of poster paper. They can include charts/diagrams/pictures etc. to explain their thinking.
5. Have each team take a turn at sharing out what they did and what they noticed.

**NOTE:** If any group is done early, have them move on to the expert challenge on the second page of the handout.

## CONNECTION CONVERSATION:

Discuss the activity using the following questions:

1. At the end of the discussion ask students to think & write about the similarities and differences between the approach they took and that of their peers. Then have them share out what they wrote.
2. Reflect on your group work today:
  - Was your group successful or not?
  - Why do you think this is?
  - What could you do to improve your chances next time?

**NOTES:**

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper has a slight shadow on the right side, suggesting it's resting on a surface.

## SKILL BUILDING THROUGH MATH

# Mike Monster Mash



**NAME:**

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### DIRECTIONS:

Mike is planning a party for all of his monster friends. In the party room, he has tons of square tables that seat one monster on each side. To fit more people, Mike decides to push tables together.

1. Mike sees that there are 8 tables that are already clean and ready for the party. He wants to fit as many people on these 8 tables as possible. What is the maximum amount of people he can fit if they are all seated together?

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2. Sully, Mike's friend, has been cleaning more tables while Mike has been planning. Mike now has 20 tables available. What is the maximum number of people he can fit at these tables if they are all seated together?

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3. How people can fit at ANY number of tables if they are seated together?

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## EXPERT CHALLENGE:

1. Mike sees that there are 8 tables that are already clean and ready for the party. He now wants to fit the LEAST amount of people on these 8 tables as possible (but still have every seat filled). What is the minimum amount of people he can fit if they are all seated together and every possible seat is taken?

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2. Sonia, Mike's friend, has been cleaning more tables while Mike has been planning. Mike now has 20 tables available. What is the MINIMUM number of people he can fit at these tables if they are all seated together and every seat is taken?

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3. Make a statement about the minimum number of people that can fit at 100 tables if they are seated together and every seat is taken.

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# Title of Activity: **Zombie Problem**

## Type of Activity: **Math**

**TIME NEEDED: 35 MINUTES**

### **SKILLS:**

- Collaboration
- Solving complex puzzles
- Organizing information in a logical manner

### **PROJECT AND PURPOSE:**

Participants will work in groups of max four to solve a complex puzzle in mathematics.

### **MATERIALS:**

- Activity sheet
- Projector and computer (Hook: If possible... <https://www.mathgames.com/play/zombiemath.html>)
- Chart Paper
- Markers
- Dry erase boards/markers or scrap paper
- Post-its

### **PROCEDURE:**

1. Hook (Optional): Play the video for students and have them write any questions that arise during the video.
2. Provide students with the task and have them work in groups of max four to solve the problem in any way they would like. (20 minutes)
3. During the last 5 minutes of the activity provide each group with chart paper and markers and instruct them to show their thinking on the chart paper in any way they would like.
4. At the end of the 20 minutes, distribute Post-its to each student and have them circulate the room to look for similarities and differences between their work and the other groups' work. They should write comments or questions for the other teams on post its and place them on their chart papers. (5 min)
5. Have the teams return to their charts and discuss some of the comments each team wrote on their poster.
6. Have students complete a set of three reflection questions (below) of which they will each select one to share during a circle discussion.
7. Have all students stand in a circle and respond to one of the three questions asked.

### CONNECTION CONVERSATION:

Discuss the activity using the following questions:

- What was challenging about this task? Explain.
- How did your group approach the problem?
- Was your team successful, yes or no, and why?

### SOLUTION TO PROBLEM:

- You and Lab Assistant - 2 min
- You return - 1 min
- Professor and Janitor Cross - 10 min
- Assistant - 2 min
- You and Lab Assistant - 2 min
- Total:  $2+1+10+2+2=17$  min

### NOTES:

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# The ZOMBIE Problem

NAME: \_\_\_\_\_

## DIRECTIONS:



Your goal is to get across the rope bridge in **17 minutes or less**. You are with the lab assistant, the janitor and old professor. All four of you must make it across before the zombies come but the bridge **cannot hold any more than 2 people at a time**. Also, since it is dark out, **someone must always be holding the lantern**. How can you get everyone across the bridge before the zombies come?

1. How long does it take each person to travel?

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2. How long does it take each person to travel?

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# Title of Activity: Locker Problem

## Type of Activity: Math

**TIME NEEDED: 30 MINUTES**

### SKILLS:

- Quantitative Reasoning
- Deductive Reasoning
- Collaboration

### PROJECT AND PURPOSE:

Participants work in small groups to solve a rigorous task relating to high school lockers.

### MATERIALS:

- Chart paper/markers
- Manipulatives: small rectangles cut out to represent lockers
- Activity sheet
- Desks/chairs
- Color pens or pencils (to help students organize their work)

### PROCEDURE:

1. Introduce the activity to students as the locker problem. They will be working in teams of no more than 4 to determine which lockers are left open at the end of a series of tasks. Participants should be given the option to use the chart provided, create tables, draw pictures, use manipulatives, or approach the task in any way they feel is most appropriate.
2. Have each team designate a reader who will read aloud the task to their team. They should underline important information and any questions they have prior to beginning the activity. Answer any questions prior to the activity and then have the groups begin work.
3. Provide each group with a minimum of 15 minutes to work on the task, depending on the age/group, some teams may need more time to complete the task. Circulate the room and ask the questions below to help struggling groups.
4. At the end of the 15 min, have each team take some time to prepare a presentation for their classmates on chart paper. They should focus on the process for solving the task more than the actual answer for the presentation.
5. Have each team share how they approached the problem. Then ask the guiding questions at the end of the activity (assuming they have not been answered previously during the presentation).
6. **Solution:** The lockers left open are 1, 4, 16, 25, 36, 49, 64, 81, 100 (all which happen to be perfect squares).
7. Have students work on some reflection questions at the end of the activity.

## CONNECTION CONVERSATION:

Questions to ask during the activity:

- How are you attempting to solve this problem in your team?
- How can you organize your information so that you don't make errors that can impact your final response?

Questions to ask after students complete the activity:

- What lockers are left open and why are these specific lockers left open? (Odd number of factors)
- What do you notice about the numbers of the lockers that were left open? (All perfect squares)
- Which lockers were opened and closed most often? (72 and 96: They have the most number of factors)

### Reflection Questions:

- What was challenging about this task? Why was it challenging?
- What are some similarities/differences between how other teams solved the problems and how your team solved it?
- After the discussion and seeing how other groups solved the task, what could you do in the future to improve your success on a challenging task like this one?

**NOTES:**

[illegible]

# The Locker Problem

**NAME:**

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**DIRECTIONS:**

One hundred 9th grade students are assigned lockers 1 through 100. The student assigned to locker number 1 opens all 100 lockers. The student assigned to locker number 2 then closes all lockers whose numbers are multiples of 2. The student assigned to locker number 3 changes the status of all lockers whose numbers are multiples of 3 (e.g. locker number 3, which is open gets closed, locker number 6, which is closed, gets opened). The student assigned to locker number 4 changes the status of all locker whose numbers are multiples of 4, and so on for all 100 lockers.

1. What lockers are left open?

|    |    |    |    |    |    |    |    |    |     |
|----|----|----|----|----|----|----|----|----|-----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10  |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20  |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30  |
| 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40  |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50  |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60  |
| 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70  |
| 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80  |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90  |
| 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

2. Assume the school had an infinite number of lockers and students. Which lockers would remain open?

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# Title of Activity: **Four-Color Theorem**

## Type of Activity: **Math**

**TIME NEEDED: 15-20 MINUTES**

### **SKILLS:**

- Deductive reasoning
- Collaboration

### **PROJECT AND PURPOSE:**

Participants will work in small groups to make a claim regarding the least number of colors necessary to color in a map and test their claims to determine its accuracy. They will then learn the Four-Color Theorem (you can color an entire map using only four colors in such a way that regions sharing a common border do not share the same color) and test it using a map of the U.S.A.

### **MATERIALS:**

- Task
- Colored pencils/crayons/markers
- Desks/chairs

### **PROCEDURE:**

1. Ask students to color the 9x9 square given at the top of the activity by following the rule: **Squares that share an edge cannot be colored the same color!**
2. Once students have colored their diagrams, ask: "What is the **smallest** number of colors you need in order to color the 9-square pattern, following the ONE rule?" Then ask students if they think this number will apply to other diagrams as well.
3. Students will test their hypothesis from the last question by moving onto #1. Students should be trying to color the diagram in the least number of colors possible. Have students share out how many colors they were able to use. Determine the lowest. It should be 3!
4. Students will then move on to #2 and see if they can do it in the least number of colors possible. Have students share out how many colors they were able to use. Determine the lowest. It should be 4!
5. Now tell students that we are going to try this on an actual map and have them look at the map of part of Europe. Have them color in the least number of colors and see what they come up with. Again, it should be 4!
6. Introduce the Four-Color Theorem: "The Four-Color theorem states that any map in a plane can be colored using four colors in such a way that regions sharing a common boundary (other than a single point) do not share the same color." ANY map or diagram can be colored in 4 colors, following this rule.

- 7.** Lastly, ask students to verify the Four-Color Theorem by attempting to color the map of the U.S. in only four colors, following the provided rule.

## CONNECTION CONVERSATION:

Discuss the activity using the following questions:

- Can you do it with fewer colors?
- How do you know that you used the least number of colors?
- Is this always going to be true?

**NOTES:**

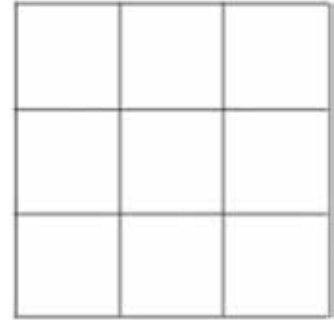
[illegible]

# Four-Color Theorem

NAME: \_\_\_\_\_

## STEP 1: COLOR EACH OF THE SQUARES TO THE LEFT

There is only ONE rule: Squares that share an edge cannot be colored the same color!



## STEP 2: TEST YOUR CLAIM FOR OTHER FIGURES

You may need to modify the claim after each test to develop a theorem.

Figure 1

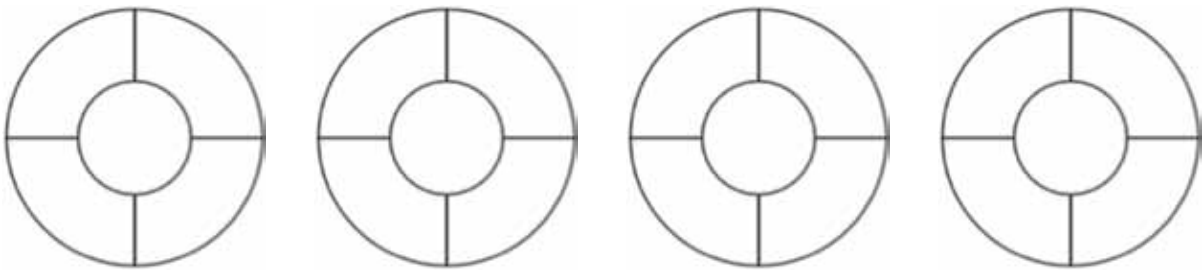
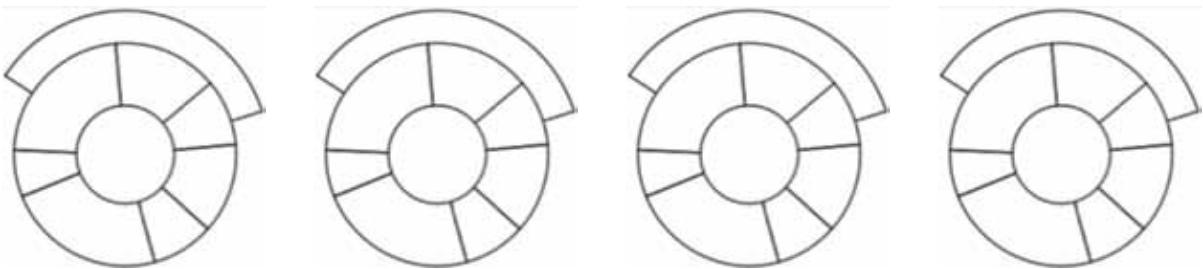


Figure 2



**Figure 3**



**STEP 3: VERIFY THIS THEOREM BY COLORING IN THIS MAP OF THE U.S.A**

The Four-Color Theorem says that...

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# **Title of Activity: Cell Phone Problem**

## **Type of Activity: Math**

**TIME NEEDED: 30 MINUTES**

### **SKILLS:**

- Data analysis
  - Representing data using charts, tables, graphs, and other diagrams.
- Developing a claim and providing evidence to support the claim
- Modeling real-world scenarios using linear functions

### **PROJECT AND PURPOSE:**

Participants work in groups of no more than four students to determine which of two data plans is the best option.

### **MATERIALS:**

- Task
- Graph paper
- Rulers
- Calculators (can be scientific or graphing)
- Chart paper
- Markers
- Blank scrap paper
- If there is more time, computers to research current data plans and determine which plans are the best options at the end of the activity.

### **PROCEDURE:**

1. Provide students with the task and have one of them read aloud the introduction.
2. Give participants 2 minutes to write as many things to consider before selecting a data plan as they can. At the end of the two minutes, have them do a pair share. They turn to a partner and take turns sharing their responses. After this, select different members of the group to share one consideration their peer wrote for the first portion of the activity.
3. Present the two data options (Platinum or Diamond) and have students consider which of the two options they would prefer to take and why, without performing any calculations.
4. Have them share in their pairs and then select a few to share their arguments with the whole group.

5. Explain to participants that they may select any of the materials and can use any method to generate evidence to support their claims. At the end of the activity, pairs of teams need to develop an argument for which of the two plans they chose and why their choice makes the most sense, based on the data they collected/organized. (15 minutes)
6. Have teams present their work with the group and provide evidence for why their claim makes the most sense.
7. **Solution (may vary):** Students may determine that the Platinum plan makes the most sense, since for 900 text messages, the Diamond plan ends up being more expensive. Other students may argue that 900 texts are not sufficient in a data plan since they send approximately \_\_\_\_\_ number of texts a day. (Some of them may send the 900 in less than a week or a few days.)

### CONNECTION CONVERSATION:

Discuss the activity using the following questions:

- What plan costs the least over time?
- Why would it make sense to select the first plan? What about the second plan?
- How did you go about representing both plans?
- How are these multiple representations related?

### NOTES:

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# Cell Phone Problem

NAME:



## DIRECTIONS:

You are finally moving out of your parent's phone plan and need to figure out which data plan is the best option. What are some of the things you may need to consider before selecting a plan?

1.

2.

3.

4.

5.

The following two companies offer you a data plan involving only text messages (... who makes phone calls nowadays anyways?):

- **Platinum:** \$30 flat fee per month and \$0.10 per text
- **Diamond:** \$60 flat fee per month (for up to 900 text messages)

Which of the following two plans do you think is the better option? Explain why below.

Use tables, charts, diagrams, or graphs to determine which of the two is the better plan. Be prepared to present your approach to solving the problem and argument for whichever of the two plans your team chose.

# Title of Activity: **Wage Gap**

## Type of Activity: **Math**

**TIME NEEDED: 30-45 MINUTES**

### **SKILLS:**

- Data analysis
- Developing claims and supporting arguments with evidence.

### **PROJECT AND PURPOSE:**

Participants work in groups to analyze data to determine whether or not the gap between women's and men's salaries is actually closing (and if so, at what rate).

### **MATERIALS:**

- Data
- Four corners activity labels (Strongly Agree, Agree, Strongly Disagree, Disagree)
- Graph paper
- Chart paper
- Graphing calculators

### **PROCEDURE:**

- 1. Hook:** Begin with a four corners activity:
  - Label each of the four corners of the room as either strongly agree, agree, strongly disagree, and disagree.
  - Explain to participants that you will be saying 4 statements, one at a time. For each round, participants should walk to the area that represents how they feel about each of the statements.
  - After everyone has selected a corner, select random participants to argue why they chose to agree/disagree/etc with the statement.
    - Women have the same opportunities men do.
    - Men are more capable of doing certain jobs than women.
    - Women's equality has made more progress in education than it has made in politics.
    - Women used to get paid less than men, but now that is no longer the case.
- 2.** Provide students with the chart of salaries. Give students 3 minutes to write down as many observations as they have about the data. They can choose to focus on only the overall or all of the data presented.
- 3.** Have a brief share out and record all student observations about the data.

4. Ask students the following question: “According to this data, do you believe women’s salaries will ever catch up to those of men?” Be sure to tell students that any claim they make must be supported with evidence from the data. Give students 10 minutes to discuss in their teams. Be sure to have several things available for them (graphing calculators, graph paper, rulers).
5. After the 10 minutes are up, ask groups to transfer their arguments to poster paper and hang them around the room. Give students 10 minutes to do this.
6. Have a domino share where one representative shares their argument with the rest of the class. Once everyone has shared, ask students if anyone would like to respond to another team’s argument.
7. Wrap up by asking each student to write down one thing they learned from today’s activity and one thing they still wonder after working with the salary data.

## CONNECTION CONVERSATION:

Discuss the activity using the following questions:

- What do you notice?
- Is that supported by the data?
- Where do you see evidence of that?
- How else could this data have been represented to make it easier for some people to analyze the information given?

**NOTES:**

[illegible]

## SKILL BUILDING THROUGH MATH

# The Overall Wage Gap Over Time

| Year | Women's Earnings | Men's Earnings | Gap in Earnings | Women's/Men's Earnings Ratio | Wage Gap |
|------|------------------|----------------|-----------------|------------------------------|----------|
| 2014 | \$39,621         | \$50,383       | \$10,762        | 78.6%                        | 21.4%    |
| 2013 | \$39,428         | \$50,833       | \$11,405        | 77.6%                        | 22.4%    |
| 2012 | \$38,967         | \$50,936       | \$11,969        | 76.5%                        | 23.5%    |
| 2011 | \$39,073         | \$50,740       | \$11,667        | 77.0%                        | 23.0%    |
| 2010 | \$40,055         | \$52,068       | \$12,013        | 76.9%                        | 23.1%    |
| 2009 | \$40,030         | \$52,001       | \$11,971        | 77.0%                        | 23.0%    |
| 2008 | \$39,305         | \$50,985       | \$11,680        | 77.1%                        | 22.9%    |
| 2007 | \$40,080         | \$51,511       | \$11,431        | 77.8%                        | 22.2%    |
| 2006 | \$38,179         | \$49,623       | \$11,444        | 76.9%                        | 23.1%    |
| 2005 | \$38,620         | \$50,171       | \$11,551        | 77.0%                        | 23.0%    |
| 2004 | \$39,154         | \$51,131       | \$11,977        | 76.6%                        | 23.4%    |
| 2003 | \$39,548         | \$52,348       | \$12,800        | 75.5%                        | 24.5%    |
| 2002 | \$39,745         | \$51,886       | \$12,141        | 76.6%                        | 23.4%    |
| 2001 | \$39,066         | \$51,180       | \$12,114        | 76.3%                        | 23.7%    |
| 2000 | \$37,752         | \$51,210       | \$13,458        | 73.7%                        | 26.3%    |
| 1999 | \$37,404         | \$51,724       | \$14,320        | 72.3%                        | 27.7%    |
| 1998 | \$37,541         | \$51,306       | \$13,765        | 73.2%                        | 26.8%    |
| 1997 | \$36,741         | \$49,542       | \$12,801        | 74.2%                        | 25.8%    |
| 1996 | \$35,637         | \$48,313       | \$12,676        | 73.8%                        | 26.2%    |
| 1995 | \$34,729         | \$48,621       | \$13,892        | 71.4%                        | 28.6%    |
| 1994 | \$35,104         | \$48,777       | \$13,673        | 72.0%                        | 28.0%    |
| 1993 | \$35,098         | \$49,074       | \$13,976        | 71.5%                        | 28.5%    |
| 1992 | \$35,351         | \$49,941       | \$14,590        | 70.8%                        | 29.2%    |
| 1991 | \$34,853         | \$49,891       | \$15,038        | 69.9%                        | 30.1%    |
| 1990 | \$34,836         | \$48,643       | \$13,807        | 71.6%                        | 28.4%    |
| 1989 | \$34,612         | \$50,401       | \$15,789        | 68.7%                        | 31.3%    |
| 1988 | \$33,868         | \$51,277       | \$17,409        | 66.0%                        | 34.0%    |
| 1987 | \$33,725         | \$51,743       | \$18,018        | 65.2%                        | 34.8%    |
| 1986 | \$33,465         | \$52,069       | \$18,604        | 64.3%                        | 35.7%    |
| 1985 | \$32,794         | \$50,785       | \$17,991        | 64.6%                        | 35.4%    |
| 1984 | \$32,088         | \$50,407       | \$18,319        | 63.7%                        | 36.3%    |
| 1983 | \$31,467         | \$49,481       | \$18,014        | 63.6%                        | 36.4%    |
| 1982 | \$30,666         | \$49,665       | \$18,999        | 61.7%                        | 38.3%    |
| 1981 | \$29,985         | \$50,621       | \$20,636        | 59.2%                        | 40.8%    |
| 1980 | \$30,640         | \$50,930       | \$20,290        | 60.2%                        | 39.8%    |
| 1979 | \$30,888         | \$51,771       | \$20,883        | 59.7%                        | 40.3%    |
| 1978 | \$31,149         | \$52,403       | \$21,254        | 59.4%                        | 40.6%    |
| 1977 | \$30,679         | \$52,067       | \$21,388        | 58.9%                        | 41.1%    |
| 1976 | \$30,651         | \$50,921       | \$20,270        | 60.2%                        | 39.8%    |
| 1975 | \$30,033         | \$51,061       | \$21,028        | 58.8%                        | 41.2%    |

**Source:** National Women's Law Center calculations based on U.S. Census Bureau, Current Population Survey, Historical Data, Table P-38: Full-Time, Year-Round Workers by Median Earnings and Sex, available at [www.census.gov/hhes/www/income/data/historical/people/](http://www.census.gov/hhes/www/income/data/historical/people/). Median earnings are in 2014 dollars. Figures may differ from those in other NWLC reports due to rounding or updated Census estimates.

## SKILL BUILDING THROUGH MATH

# The Wage Gap for Black Women Over Time

| Year | White, non-Hispanic Men's Earnings | Black Women's Earnings | Gap in Earnings | Black Women's/White, non-Hispanic Men's Earnings Ratio | Wage Gap |
|------|------------------------------------|------------------------|-----------------|--|----------|
| 2014 | \$33,533                           | \$55,470               | \$21,937        | 60.5%  | 39.5%    |
| 2013 | \$32,985                           | \$56,046               | \$23,061        | 58.9%  | 41.1%    |
| 2012 | \$34,940                           | \$54,170               | \$19,230        | 64.5%  | 35.5%    |
| 2011 | \$35,265                           | \$55,073               | \$19,808        | 64.0%  | 36.0%    |
| 2010 | \$35,076                           | \$56,421               | \$21,345        | 62.2%  | 37.8%    |
| 2009 | \$35,115                           | \$56,722               | \$21,607        | 61.9%  | 38.1%    |
| 2008 | \$34,625                           | \$56,347               | \$21,722        | 61.4%  | 38.6%    |
| 2007 | \$35,407                           | \$57,468               | \$22,061        | 61.6%  | 38.4%    |
| 2006 | \$35,640                           | \$56,855               | \$21,215        | 62.7%  | 37.3%    |
| 2005 | \$35,970                           | \$56,294               | \$20,324        | 63.9%  | 36.1%    |
| 2004 | \$34,760                           | \$57,078               | \$22,318        | 60.9%  | 39.1%    |
| 2003 | \$34,709                           | \$57,611               | \$22,902        | 60.2%  | 39.8%    |
| 2002 | \$35,375                           | \$55,898               | \$20,523        | 63.3%  | 36.7%    |
| 2001 | \$35,562                           | \$55,735               | \$20,173        | 63.8%  | 36.2%    |
| 2000 | \$34,490                           | \$56,704               | \$22,214        | 60.8%  | 39.2%    |
| 1999 | \$34,433                           | \$57,487               | \$23,054        | 59.9%  | 40.1%    |
| 1998 | \$32,876                           | \$54,776               | \$21,900        | 60.0%  | 40.0%    |
| 1997 | \$32,419                           | \$53,843               | \$21,424        | 60.2%  | 39.8%    |
| 1996 | \$32,274                           | \$53,270               | \$20,996        | 60.6%  | 39.4%    |
| 1995 | \$31,901                           | \$53,107               | \$21,206        | 60.1%  | 39.9%    |
| 1994 | \$31,476                           | \$51,599               | \$20,123        | 61.0%  | 39.0%    |
| 1993 | \$31,981                           | \$51,599               | \$19,618        | 62.0%  | 38.0%    |
| 1992 | \$32,686                           | \$52,461               | \$19,775        | 62.3%  | 37.7%    |
| 1991 | \$31,745                           | \$52,648               | \$20,903        | 60.3%  | 39.7%    |
| 1990 | \$31,704                           | \$52,957               | \$21,253        | 59.9%  | 40.1%    |
| 1989 | \$32,067                           | \$55,264               | \$23,197        | 58.0%  | 42.0%    |
| 1988 | \$31,814                           | \$54,357               | \$22,543        | 58.5%  | 41.5%    |
| 1987 | \$31,412                           | \$54,192               | \$22,780        | 58.0%  | 42.0%    |
| 1986 | \$30,376                           | \$53,452               | \$23,076        | 56.8%  | 43.2%    |
| 1985 | \$30,032                           | \$52,604               | \$22,572        | 57.1%  | 42.9%    |
| 1984 | \$29,787                           | \$52,022               | \$22,235        | 57.3%  | 42.7%    |
| 1983 | \$28,697                           | \$50,693               | \$21,996        | 56.6%  | 43.4%    |
| 1982 | \$28,587                           | \$50,902               | \$22,315        | 56.2%  | 43.8%    |
| 1981 | \$27,981                           | \$51,735               | \$23,754        | 54.1%  | 45.9%    |
| 1980 | \$29,203                           | \$52,422               | \$23,219        | 55.7%  | 44.3%    |
| 1979 | \$28,676                           | \$52,958               | \$24,282        | 54.1%  | 45.9%    |
| 1978 | \$29,386                           | \$53,286               | \$23,900        | 55.1%  | 44.9%    |
| 1977 | \$28,824                           | \$53,612               | \$24,788        | 53.8%  | 46.2%    |
| 1976 | \$28,952                           | \$52,276               | \$23,324        | 55.4%  | 44.6%    |
| 1975 | \$28,965                           | \$52,246               | \$23,281        | 55.4%  | 44.6%    |

**Source:** National Women's Law Center calculations based on U.S. Census Bureau, Current Population Survey, Historical Data, Table P-38: Full-Time, Year-Round Workers by Median Earnings and Sex, available at [www.census.gov/hhes/www/income/data/historical/people/](http://www.census.gov/hhes/www/income/data/historical/people/). Median earnings are in 2014 dollars. Figures may differ from those in other reports due to rounding or updated Census estimates. Data for white, non-Hispanic men are for "white alone, not Hispanic" from 2002-2014, "white, not Hispanic" from 1987-2001, and "white" from 1967-1986. Data for black women are for "black alone" from 2002-2014 and "black" from 1967-2001.

## SKILL BUILDING THROUGH MATH

# The Wage Gap for Hispanic Women Over Time

| Year | White, non-Hispanic Men's Earnings | Hispanic Women's Earnings | Gap in Earnings | Hispanic Women's/White, non-Hispanic Men's Earnings Ratio | Wage Gap |
|------|------------------------------------|---------------------------|-----------------|---|----------|
| 2014 | \$30,293                           | \$55,470                  | \$25,177        | 54.6%   | 45.4%    |
| 2013 | \$31,165                           | \$56,046                  | \$24,881        | 55.6%   | 44.4%    |
| 2012 | \$29,309                           | \$54,170                  | \$24,861        | 54.1%   | 45.9%    |
| 2011 | \$30,548                           | \$55,073                  | \$24,525        | 55.5%   | 44.5%    |
| 2010 | \$30,602                           | \$56,421                  | \$25,819        | 54.2%   | 45.8%    |
| 2009 | \$29,992                           | \$56,722                  | \$26,730        | 52.9%   | 47.1%    |
| 2008 | \$29,520                           | \$56,347                  | \$26,827        | 52.4%   | 47.6%    |
| 2007 | \$30,386                           | \$57,468                  | \$27,082        | 52.9%   | 47.1%    |
| 2006 | \$29,588                           | \$56,855                  | \$27,267        | 52.0%   | 48.0%    |
| 2005 | \$29,354                           | \$56,294                  | \$26,940        | 52.1%   | 47.9%    |
| 2004 | \$29,422                           | \$57,078                  | \$27,656        | 51.5%   | 48.5%    |
| 2003 | \$28,786                           | \$57,611                  | \$28,825        | 50.0%   | 50.0%    |
| 2002 | \$28,832                           | \$55,898                  | \$27,066        | 51.6%   | 48.4%    |
| 2001 | \$28,740                           | \$55,735                  | \$26,995        | 51.6%   | 48.4%    |
| 2000 | \$28,400                           | \$56,704                  | \$28,304        | 50.1%   | 49.9%    |
| 1999 | \$27,553                           | \$57,487                  | \$29,934        | 47.9%   | 52.1%    |
| 1998 | \$27,901                           | \$54,776                  | \$26,875        | 50.9%   | 49.1%    |
| 1997 | \$27,914                           | \$53,843                  | \$25,929        | 51.8%   | 48.2%    |
| 1996 | \$28,054                           | \$53,270                  | \$25,216        | 52.7%   | 47.3%    |
| 1995 | \$26,518                           | \$53,107                  | \$26,589        | 49.9%   | 50.1%    |
| 1994 | \$27,775                           | \$51,599                  | \$23,824        | 53.8%   | 46.2%    |
| 1993 | \$27,046                           | \$51,599                  | \$24,553        | 52.4%   | 47.6%    |
| 1992 | \$28,257                           | \$52,461                  | \$24,204        | 53.9%   | 46.1%    |
| 1991 | \$27,546                           | \$52,648                  | \$25,102        | 52.3%   | 47.7%    |
| 1990 | \$27,543                           | \$52,957                  | \$25,414        | 52.0%   | 48.0%    |
| 1989 | \$28,883                           | \$55,264                  | \$26,381        | 52.3%   | 47.7%    |
| 1988 | \$28,557                           | \$54,357                  | \$25,800        | 52.5%   | 47.5%    |
| 1987 | \$28,967                           | \$54,192                  | \$25,225        | 53.5%   | 46.5%    |
| 1986 | \$28,525                           | \$53,452                  | \$24,927        | 53.4%   | 46.6%    |
| 1985 | \$27,425                           | \$52,604                  | \$25,179        | 52.1%   | 47.9%    |
| 1984 | \$27,236                           | \$52,022                  | \$24,786        | 52.4%   | 47.6%    |
| 1983 | \$26,377                           | \$50,693                  | \$24,316        | 52.0%   | 48.0%    |
| 1982 | \$26,184                           | \$50,902                  | \$24,718        | 51.4%   | 48.6%    |
| 1981 | \$26,807                           | \$51,735                  | \$24,928        | 51.8%   | 48.2%    |
| 1980 | \$26,486                           | \$52,422                  | \$25,936        | 50.5%   | 49.5%    |
| 1979 | \$25,691                           | \$52,958                  | \$27,267        | 48.5%   | 51.5%    |
| 1978 | \$26,901                           | \$53,286                  | \$26,385        | 50.5%   | 49.5%    |
| 1977 | \$26,756                           | \$53,612                  | \$26,856        | 49.9%   | 50.1%    |
| 1976 | \$26,409                           | \$52,276                  | \$25,867        | 50.5%   | 49.5%    |
| 1975 | \$25,739                           | \$52,246                  | \$26,507        | 49.3%   | 50.7%    |

**Source:** National Women's Law Center calculations based on U.S. Census Bureau, Current Population Survey, Historical Data, Table P-38: Full-Time, Year-Round Workers by Median Earnings and Sex, available at [www.census.gov/hhes/www/income/data/historical/people/](http://www.census.gov/hhes/www/income/data/historical/people/). Median earnings are in 2014 dollars. Figures may differ from those in other reports due to rounding or updated Census estimates. Data for white, non-Hispanic men are "white alone, not Hispanic" from 2002-2014, "white, not Hispanic" from 1987-2001, and "white" from 1974-1987. Hispanics may be of any racial group.

# INDEX

## Skill Building Through Technology: Online Games for Building Skills

| Title of Game          | Website and Description  | Skills Practiced                                   |
|------------------------|--|--|
| Blocks with Letters On | <a href="https://www.kongregate.com/games/morpheme/blocks-with-letters-on">https://www.kongregate.com/games/morpheme/blocks-with-letters-on</a><br>Players move the letters around to create words but must also get the blocks into their order on the yellow bar. This means it isn't only figuring out what the word is, but players must move the blocks in a way that makes sure that the blocks do not get out of order. | Organizing<br><br>Spelling                         |
| COG Factory            | <a href="http://www.freeworldgroup.com/games6/gameindex/cogfactory.htm">http://www.freeworldgroup.com/games6/gameindex/cogfactory.htm</a><br>A matching game, the player matches up the color of cogs into the same color tubes. Like Tetris, it helps people deal with order under pressure.  | Mechanical reasoning<br><br>Organization           |
| Connect 10             | <a href="https://www.mindgames.com/game/Connect+10">https://www.mindgames.com/game/Connect+10</a><br>A math game in which players are given a block full of numbers and must click on two numbers that add up to 10 (5+5, 6+4). There are three levels and players have to see how many combos you can find in the allotted time.  | Arithmetic computation without calculators         |
| Continuity             | <a href="http://www.addictinggames.com/action-games/continuity-game.jsp">http://www.addictinggames.com/action-games/continuity-game.jsp</a><br>A 2-dimensional character must get through a door but he must find the key. In each 'room' there is a series of boxes. Once the key is reached, the character must be able to cleanly get into the next room.   | Interpreting and following directions<br><br>Logic |

**INDEX: SKILL BUILDING THROUGH TECHNOLOGY:** Online Games for Building Skills

| Title of Game          | Website and Description  | Skills Practiced                                      |
|------------------------|--|---|
| Destination Impossible | <a href="http://www.bbc.co.uk/skillswise/game/en33inst-game-destination-impossible">http://www.bbc.co.uk/skillswise/game/en33inst-game-destination-impossible</a><br>In this instruction based driving/map game, players are given a series of instructions and three choices (A, B, C).                         | Interpreting and following directions<br>Reading maps |
| Fallout Shelter        | <a href="http://www.falloutshelter.com/">http://www.falloutshelter.com/</a><br>In this game there are a number of people living in a fallout shelter, and they all have different types of skills. Players must construct a shelter with power rooms, water rooms and kitchens to allow these people to survive. | Advising and interacting with others                  |
| Funny Farm             | <a href="http://shygypsy.com/farm/p.cgi">http://shygypsy.com/farm/p.cgi</a><br>This is a word matching game, but in this game players click on the matching words in a sequence so all the words have something to do with each other.   | Categorizing<br>Organizing<br>Sequencing              |
| Kissin' Kuzzins        | <a href="https://www.jamandcandy.com/kissin-kuzzins/">https://www.jamandcandy.com/kissin-kuzzins/</a><br>This game is mainly about matching various words that are in the same categories; this can be as simple as two celebrities with the same last name or scientific names for the same plants.             | Categorizing<br>Organizing                            |
| Lemmings               | <a href="http://www.crazygames.com/game/html5-lemmings">http://www.crazygames.com/game/html5-lemmings</a><br>Players give instructions to various lemmings (digging, floating, mining, etc.). There are various levels of difficulty to choose from.   | Interpretation of rules, regulations, instructions    |

**INDEX: SKILL BUILDING THROUGH TECHNOLOGY:** Online Games for Building Skills

| Title of Game  | Website and Description  | Skills Practiced   |
|----------------|--|--|
| Light Bot      | <a href="http://lightbot.com/flash.html">http://lightbot.com/flash.html</a><br>Players light up various squares, but unlike other games players use the command buttons on the side of the screen instead of just using the left and right keys.                               | Following directions<br>Mechanical reasoning   |
| Machinarium    | <a href="http://machinarium.net/">http://machinarium.net/</a><br>Puzzle game, point and click, following a basic story and solving various problems. This includes numbering, sequencing, creative thinking, pattern recognition, and other skills.                            | Arithmetic computation without calculators<br>Pattern recognition<br>Reading comprehension<br>Sequencing |
| NBLOX / TETRIS | <a href="https://n-blox.com/">https://n-blox.com/</a><br>Use logic and special skills to put falling shapes into the best place to form a solid block.   | Logic<br>Mechanical reasoning  |
| NEOPETS        | <a href="http://www.neopets.com/">http://www.neopets.com/</a><br>There are various story elements within this site but there is also a stock market game which forces you to use the money that you earn in the other site games to invest in various companies within Neopia. | Working with money   |

**INDEX: SKILL BUILDING THROUGH TECHNOLOGY:** Online Games for Building Skills

| Title of Game          | Website and Description  | Skills Practiced   |
|------------------------|--|--|
| PICROSS /<br>HEXCELLS  | <a href="http://store.steampowered.com/">http://store.steampowered.com/</a><br><a href="http://www.matthewbrowngames.com/">http://www.matthewbrowngames.com/</a><br>Players turn certain blocks certain colors as well as destroy some of them in a specific order so that all the blocks end up disappearing.   | Mechanical Reasoning<br>Sequencing   |
| Practical Money Skills | <a href="https://www.practicalmoneyskills.com/play">https://www.practicalmoneyskills.com/play</a><br>This has a variety of financial games including one called "Financial Football."  | Working with money   |
| Rapid Math             | <a href="https://www.mindgames.com/game/Rapid+Math">https://www.mindgames.com/game/Rapid+Math</a><br>Player must solve as many equations as possible in the allotted time – everything from addition to multiplication.  | Arithmetic computation without calculators   |
| Reality Check          | <a href="http://www.jumpstart.org/reality-check.html">http://www.jumpstart.org/reality-check.html</a><br>Different financial planning skills for young people.   | Working with money   |
| SAMAROST<br>1, 2       | <a href="http://amanita-design.net/samorost-1/">http://amanita-design.net/samorost-1/</a><br><a href="http://amanita-design.net/samorost-2/">http://amanita-design.net/samorost-2/</a><br>Puzzle game, point and click, following a basic story and solving various problems. This includes numbering, sequencing, creative thinking, pattern recognition, and other skills. | Arithmetic computation without calculators<br>Pattern recognition<br>Reading comprehension<br>Sequencing |

**INDEX: SKILL BUILDING THROUGH TECHNOLOGY:** Online Games for Building Skills

| Title of Game                 | Website and Description   | Skills Practiced  |
|-------------------------------|---|---|
| Threes                        | <a href="http://asherv.com/threes/">http://asherv.com/threes/</a><br>Players arrange the numbers into multiples of three, and the board will continue to fill up as these multiples are found.  | Arithmetic computation<br>without calculators                                 |
| Two Dots                      | <a href="https://www.dots.co/twodots/">https://www.dots.co/twodots/</a><br>Player connects two dots that are the same color horizontally or vertically to make those dots disappear.  | Mechanical Reasoning<br>Sequencing  |
| Video Store Clerk             | <a href="https://www.kongregate.com/games/videostoreclerk/video-store-clerk">https://www.kongregate.com/games/videostoreclerk/video-store-clerk</a><br>Player is a video store clerk and must make movie recommendations to customers based upon real movie ratings. Here's a customer service game plus real life ratings. (Be forewarned, this game is a little old but relevant).  | Advising and Interacting<br>with others<br>Providing good customer<br>service |
| Word Nerd                     | <a href="https://play.google.com/store/apps/details?id=com.poptacular.wordnerd&amp;hl=en">https://play.google.com/store/apps/details?id=com.poptacular.wordnerd&amp;hl=en</a><br>Time based spelling game where player spells words in a sequence and all the letters must be touching (horizontally, vertically, catty-cornered). This game is timed and you must complete enough words to fill the progress bar to move on. | Organizing<br>Spelling  |
| Words with Friends / Scrabble | <a href="https://play.google.com/store/apps/details?id=com.zynga.words&amp;hl=en">https://play.google.com/store/apps/details?id=com.zynga.words&amp;hl=en</a><br>Create interlocking words using the letters on your dock.  | Organizing<br>Spelling  |

# CIVIL SERVICE JOBS

## Resources from the New York Department of Citywide Administration Services

### LOCAL GOVERNMENT

#### NEW YORK CITY ADMINISTRATIVE SERVICES

[www.nyc.gov/html/dcas/html/work/exam\\_monthly.shtml](http://www.nyc.gov/html/dcas/html/work/exam_monthly.shtml)

- Administrative Community Relations Specialist, Salaries consistent with the level of responsibility of the assignment.
- Administrative Juvenile Counselor, Salaries commensurate with the level of responsibility of the managerial assignment.
- Administrative Manager, Salary: Salaries will be consistent with the level of responsibility of the assignment.
- Administrative Staff Analyst, Salaries consistent with the level of responsibility of the assignment.
- Air Brake Maintainer, Salary: \$19.95 per hour for a 40-hour week. The rate is subject to change.
- Air Pollution Inspector, Salary: \$33,291 per year.
- Asbestos Handler, Salary: \$53,777 per year.
- Assistant Gardener, Salary: \$33,840 per year.
- Assistant Public Health Advisor, Salary: \$30,247 per year.
- Assistant Retirement Benefits Examiner, Salary: \$34,898 per year.
- Associate Cashier (Transit Authority), Salary: \$24,422. Upon completion of 2 years, the salary will increase to \$28,085.
- Associate Job Opportunity Specialist, Salary: \$33,933 per year.
- Associate Park Service Worker, Salary: \$38,305 per year.
- Auto Body Worker, Salary: \$42,564 per year.
- Auto Machinist, Salary: The current minimum salary is \$32.44 per hour.
- Auto Mechanic, Salary: The current minimum salary is \$31.37 per hour.
- Automotive Service Worker, Salary: \$30,679 per year.
- Bookkeeper, Salary: \$33,825 per year.
- Bricklayer, Salary: The current minimum salary is \$31.73 per hour.
- Bridge Operator, Salary: \$27,588 per year.
- Bridge Painter, Salary: The current minimum salary is \$44.00 per hour.
- Bridge Repairer and Riveter, Salary: The current minimum salary is \$40.69 per hour.
- Bridget and Tunnel Officer, Salary: \$36,900, reaching \$52,714 per annum after five years.

- Car Inspector, Salary: The current minimum salary is \$27.550 per hour.
- Car Maintainer-Group A, Salary: The current appointment rate is \$19.9525 per hour.
- Carpenter, Salary: The current minimum salary is \$41.71 per hour.
- Cashier, Salary: \$30,683 per year.
- Clerical Associate, Salary: \$24,859 per year.
- Cement Mason, Salary: The current minimum salary is \$34.00 per hour.
- Clerical Aide, Salary: The current minimum salary is \$24, 859 per annum.
- Conductor (Transit Authority), Salary: The current minimum salary is \$17.4975 per hour for a 40-hour week with increments to \$24.950 after 3 years.
- Correction Administrative Aide, Salary: \$30,683 per year.
- Correction Officer, Salary: \$41,992 per year.
- CUNY Office Assistant, Salary: \$26,714 per year.
- Custodian, Salary: \$28,912.
- Dockbuilder, Salary: The current minimum salary is \$38.79 per hour.
- Electrician, Salary: The current minimum salary is \$49.00 per hour.
- Electrician's Helper, Salary: The current minimum salary is \$31.10 per hour for a 3-hour week.
- Elevator Mechanic, Salary: The current minimum salary is \$43.79 per hour.
- Environmental Police Officer, Salary: \$41,992 per year.
- Engineering Technician, Salary: \$32,824 per year.
- Fingerprint Technician Trainee, Salary: \$24,457 per year.
- Firefighter, Salary: \$43,904 – \$85,292 per year.
- Graphic Designer, Salary: \$32,482 per year.
- Housing Stock Worker, Salary: \$25,370 per year.
- Interpreter (Spanish), Salary: \$39,266 per year.
- Laboratory Associate, Salary: \$33,872 per year.
- Light Maintainer, Salary: The current minimum salary is \$23.81 – \$25.84 per hour.
- Locksmith, Salary: The minimum salary is \$24.79 per hour.
- Machinist, Salary: The current minimum salary is \$31.37 per hour.
- Machinist Helper, Salary: The current minimum salary is \$29.62 per hour.
- Maintenance Worker, Salary: The current minimum salary is \$26.64 per hour.
- Market Agent, Salary: \$29,267 per year.
- Mason's Helper, Salary: The current minimum salary is \$33.88 per hour.
- Office Machine Aide, Salary: \$20,800 per year.
- Police Administrative Aide, Salary: \$30,683 per year.
- Police Communications Technician, Salary \$36, 611 per year.

- Sanitation Worker, Salary: \$33,746 per year.
- Secretary, Salary: \$24,859 per year.
- School Safety Agent, Salary: \$31,482 per year.
- Special Officer, Salary: \$31,482 per year.
- Special Officer (New York City Health and Hospitals), Salary: \$31,482 per year.
- Track Worker, Salary: The current minimum salary is \$16.51 – \$23.59 per hour.
- Traffic Enforcement Agent, Salary: \$29,812 per year.
- Watershed Maintainer, Salary: \$34,597 per year.
- Water Use Inspector, Salary: \$28,516 per year.
- Water Use Inspector Trainee, Salary: \$22,179 per year.

## **STATE GOVERNMENT**

### **NEW YORK STATE DEPARTMENT OF CIVIL SERVICE**

[www.cs.ny.gov/jobseeker](http://www.cs.ny.gov/jobseeker)

- Developmental Disabilities Secure Care Treatment Aide Trainee, Salary: \$35,915.
- Direct Support Assistant Trainee, Salary: \$30,461.
- Electronic Equipment Mechanic, Salary: \$40,172.
- Electronic Toll Maintenance Technician, Salary: \$58,012.
- Laboratory Technician, Salary: \$33,972.
- Medical Office Assistant, Salary: \$30,928.
- Motor Equipment Mechanic, Salary: \$40,172.
- Optometric Technician, Salary: \$31,181.
- Plant Utilities Assistant, Salary: \$33,972.
- Traffic Systems Technician I, Salary: \$40,507.

## **FEDERAL GOVERNMENT**

[www.usajobs.gov](http://www.usajobs.gov)

- Natural Resources Specialist (Ranger), Salary: \$32,844 to \$64,697.

## NEW YORK CITY CIVIL SERVICE GLOSSARY

[www.nyc.gov/html/dcas/html/work/civilservice\\_glossary.shtml](http://www.nyc.gov/html/dcas/html/work/civilservice_glossary.shtml)

- **Admission Notice:** Notification sent to all candidates in an assembled test informing them of when and where to report for the test and the materials needed.
- **Application:** Online form or forms a candidate must submit. A completed application form is required to register for an examination.
- **Certified List:** The Civil Service List or portion of the Civil Service List officially sent to City agencies and from which they can hire.
- **Civil Service Law:** State Law which mandated competitive exams where practicable to fill positions based on the principles of merit and fitness.
- **Committee on Manifest Errors:** A panel assembled to review appeals submitted by candidates regarding their ratings on an examination.
- **DCAS:** The Department of Citywide Administrative Services.
- **DCAS HC:** The Department of Citywide Administrative Services Human Capital.
- **Education and Experience (E&E) Examinations** are used to fill positions in which specific experience, more than general knowledge and ability, is a better indicator of a candidate's qualification for a particular position. E&E Examinations are usually offered for "professional" positions.
- **Online Education and Experience Test (OLEE)** allows candidates to apply for an education and experience test online, take the test, and receive immediate feedback about their test results. OLEE makes the tests more accessible to candidates, since it allows candidates to take the tests from their homes, or at locations convenient to them, such as the local library. OLEE has also resulted in establishing civil service lists from these exams more quickly.
- **Multiple-Choice Examinations** are generally offered for Open Competitive titles or entry level positions to the City's workforce. These exams tend to consist of 40 to 150 multiple-choice questions. The candidate records answers on a scantron sheet by coloring in circles with a No. 2 pencil.
- **Practical/Physical Examinations** test a candidate's skill or fitness in performing a specific task. Frequently, these exams are given in addition to a multiple-choice examination.
- **Filing Period:** The specific time period during which individuals are able to register to take a specific examination. The time usually lasts approximately three weeks. The City does not accept registration for an examination before or after the defined filing period.
- **Final Key:** The answer key or rating guide in an examination adopted after all protests have been evaluated and by which all candidates are scored.
- **NOE:** The Official Notice of Examination (NOE) explains the specific details of an examination. This includes test date, qualifications required to take the examination and topics the exam will cover. Read the NOE carefully before registering for an examination.

- **One in Three Rule:** Under New York State Civil Service Law, this rule provides City agencies with the discretion when hiring to select one of the three eligibles scoring highest on the ranked eligible list of exam passers.
- **Open Competitive Exam:** Exams open to anyone meeting the minimum qualifications as described in the official Notice of Examination.
- **Permanent Civil Service Status:** City employees who have been appointed from a civil service exam and passed the mandated probationary period. Persons with permanent Civil Service Status may take promotion civil service exams if they qualify.
- **Promotional Exam:** Exams open to permanent civil service employees, i.e.: those who have been appointed from a civil service exam and passed the mandated probationary period.
- **Proposed Key:** Answers in an examination by which DCAS proposes to grade candidates. Candidates are allowed to submit challenges or protests to the Proposed Key.
- **Protest Period:** A 30-day period during which candidates are permitted to present challenges to the Proposed Key.
- **Selective Certification:** A sub-list of a list of eligibles consisting of those eligibles who possess special skills, training, certifications etc. This list may be used by an agency when hiring for a position that requires special training, skills, etc.
- **Selective Certification:** A method used by agencies to appoint/promote applicants (from an eligible list) who possess additional or specialized knowledge, training, skills or abilities beyond those which are assessed through a civil service title's minimum qualification requirements. Applicants who possess a particular specialized skill for which a City agency may have an immediate need are given preference for being appointed/promoted from the eligible list over other candidates who do not possess that particular specialized skill.

