

Problem Solvers Activity 12: Dot Marks the Spot

CHILDREN ARE LEARNING TO...¹

- Understand spatial vocabulary.
- With adult support, follow directions involving their own position in space.

MATERIALS NEEDED:

Optional: Several paper maps (of local roads, the bus or subway system, etc.)

4 manila folders

Removeable dot stickers (alternative: sticky note pad)

Scissors

Glue or tape

2 stuffed animals

Photos of each side of your room, printed in color on 8 ½ x 11" copy paper (make the images as large as possible)

Handout 1: Treasure Chest

Handout 2: Spatial Language

PREPARATION:

- Take a photo of each wall of your classroom. Print 2 copies of each photo in color (if possible) on 8 ½ x 11" paper (typical copy paper). If possible, each photo should include a floor to ceiling and corner to corner image, as if you were showing the wall of a dollhouse (see sample).
- For the group activity, select a photo showing each wall of the classroom (4 photos all together). Place one dot on each image to mark where you have hidden a treasure chest in the room.
 - Where you have marked the first image with a dot, place a treasure chest.
 - Where you have marked the second image with a dot, place a treasure chest.
 - Where you have marked the third image with a dot, place a treasure chest.
 - Where you have marked the fourth image with a dot, place a treasure chest.
- If you opted not to purchase removeable dot stickers: Create removeable dots by using the sticky notes. Along the top edge of your sticky notes (where the sticky portion is on the back) draw 2-3 circles. Cut out these circles and stick them to a piece of scrap paper. Make 10 dots.



¹ Head Start Early Learning Outcomes Framework: Ages Birth to Five. <https://eclkc.ohs.acf.hhs.gov/interactive-head-start-early-learning-outcomes-framework-ages-birth-five>

- Make 4 copies of **Handout 1**. Cut out each treasure chest. Cut 2 manila folders in half (making 4 rectangles). Glue a treasure chest to each rectangle.
- For the partner activity: Open a manila folder in front of you. Select two photos of your room (walls that come together in a corner) and glue them to the two sides of the folder. Repeat with another folder and glue in the remaining two photos of the other two walls of your classroom. See sample below.



- Make a copy of **Handout 2** for reference during this activity.
- Keep the stuffed animals handy for the partner activity.
- Prepare copies of the parent handout for distribution.
- If you plan on implementing the optional book activity, refer to the preparation instructions in that section.

ACTIVITY INSTRUCTIONS

ENGAGE

Gather a group of 4 children.

Show children the map(s) you have collected. Talk about what they show and how they might be used. Unfold them so children can see their size and detail.

ASK: Does anyone know what this is? It's called a map. Have you seen a map before? What do you think we might use a map for?

Facilitate a conversation where children share what they know about maps. **See the sidebar** for information to share with children about maps.

ASK: Problem Solvers, today we are going to follow a special kind of map to help us find a treasure. Let's look at a photo. What do you see in this picture? (Show children one of the photos of the classroom. Wait for them to point out that the picture is of their room. Ask them to show/point to which side of the room is shown in the picture.)

FIVE FACTS ABOUT MAPS

When we stop to think "what is a map?" it can actually be quite difficult to define. Here are some simple ways to describe a map for children:

1. A map is a resource that shows us where streets, buildings and other things are located. There are maps of our neighborhood and maps of the whole world!
2. Using a map, we can figure out the distance between places (how far apart they are). Maps can show us how far our apartment is from our cousin's apartment.
3. Maps can help us figure out how to get from place to place using the train, bus, car, or even walking. If your grown-up is driving to your grandma's house, they may use a map to decide what streets to take.
4. Maps can be on paper or they can be on screens like a cell phone.
5. A person who draws a map is called a **cartographer**.

EXPAND

SAY: Yes—this is a photo of our classroom. We’re going to use it like a picture map, because it will show us where to find our treasure!

ASK: Where is the dot on this picture? The dot gives us a clue! (Encourage children to describe the location of the dot. Listen for spatial language in their description—in, on top, next to, beside, between, under, etc. If they don’t use this language, re-state the location of the dot modeling spatial words.)

ASK: If the dot is [**describe location of dot:** *next to the cubbies*] in the picture map, where should we look in our classroom? Can someone tell me or point to where we should go?

Other follow-up questions to consider: What makes you think to look there? What other things do you notice in that area of the room?

Wait for children to tell you or show you the location in the room.

SAY: This dot shows us where our first treasure chest is. Who would like to go and find the treasure?

Select a volunteer. When they find the treasure, have them return to the table and give you a high-five.

Take out the next prepared photo.

ASK: Here is our next map. Where is the dot now? Can you find that place in our room? Where is it? Can you point to where it is in our room? Who would like to find the treasure chest for us?

Use spatial language to describe the location of the object if the children do not—for example: “The dot is on top of the rocking chair” or “next to the door.” Vary your descriptions using the language provided in **Handout 2**.

Select a volunteer. When they find the treasure, have them return to the table and give you a high-five.

Take out the next prepared photo.

ASK: Here is our next map. Where is the dot now? Where is that in our room—can you point to show me? Who would like to find it for us?

Select a volunteer. When they find the treasure, have them return to the table and give you a high-five. Take out the final prepared photo.

ASK: Here is our last map. Where is the dot now? Where is that in our room?

Use spatial language to describe the location of the object.

Select the fourth child in the group to find the treasure and return to the table for a high-five.

EXPLAIN: We worked together as Problem Solvers! We used our picture maps to find the treasure chests! How did using the maps help us?

Introduce the next part of the game: Who would like to play again? I’ll need your help this time.

Give each child a photo of the classroom. Let them place the dot anywhere on the photo where they would like to hide a treasure chest. Then ask the children to put their treasure chest in the spot they marked on the map. Supervise to ensure that the dot on each child’s map matches where they place their treasure chest.

Ask the children to exchange maps. (You can do this in a variety of ways: asking them to switch with the child sitting next to them, by gathering all four maps and letting each child choose one, or another way you prefer.)

ASK: Who would like to be our first map reader?

Select a child to read their treasure map, find the treasure chest and bring it back. Then move on to the next child and repeat the game until all children have a turn.

EXPLORE

Repeat the game above a third time for children aged 2.5 to 3.5.

Try this classroom mapping activity as partners—for children aged 3.5 and up. Give each pair of children a stuffed animal, one of the prepared manila folders (with photos showing two sides of the room), and 6 dots.

SAY: Now, you and your partner will have a chance to play with our picture maps. Open your folder. What do you see?

Wait for children to tell you that they are looking at two walls of the classroom. Encourage them to show you “in real life” which walls they have pictures of (by pointing, walking there, etc.).

SAY: First, one partner will put a dot on a spot in the classroom. Then the other partner will use the picture map and put the stuffed animal in that spot. When they come back to the table, they will move the dot to a different spot. Their partner will move the stuffed animal to the new spot. Let’s play once as a group.

Lead the children through one demonstration round. Prompt children to use spatial language to describe the location of the dot before they go to place or move the stuffed animal.

After the demonstration, let partners play the mapping game for several rounds. Observe to ensure children are placing/describing locations accurately. If you wish, prompt children to switch picture maps halfway through to explore a new space in the room.

Conclude the activity when each child has had 3-4 turns to place the stuffed animal.

REFLECT

To close the activity, bring the children back together. Use reflective questions - like those below - to prompt children’s thinking about these activities. Listen for the spatial language they may use as they respond to these discussion questions.

- What did you do with the dot on your picture map? Where did you put the dot?
- Did you enjoy using a picture map? What did you like/not like about it?
- Where was your favorite place to find using the picture map?
- Did you have a tricky place to find using the picture map? Where was it?
- Did you put your dot in a tricky place on the map? Where was it?

INDIVIDUALIZING THE ACTIVITY

MAKE IT MORE CHALLENGING:

- In the partner activity, allow partners to play the game using images of all four sides of the room, instead of just two. This will entail making additional copies of photos and preparing additional manila folders.

MAKE IT LESS CHALLENGING:

- Use just one image (showing one side of the room) for the group and partner activity.

MAKING CONNECTIONS ACROSS THE DAY:

- Place the sample maps you collected in the Blocks area, Train Table, or another Center to encourage map play. Include blank paper and writing utensils to invite children to draw their own maps.
- Offer the treasure hunt activity (prepared manila folders and removeable dots) as a choice for free play.
- Take a walk through the neighborhood with children. Take photos along the way. Print them out and encourage children to construct a community map.
- Look for natural opportunities to use spatial language across the day: *The block area is **next** to the housekeeping area. The milk cartons are on **top** of the tray. Your mittens are **inside** your coat pockets.*
- Notice the children's community and describe it in spatial terms: *The bakery is **next** to the coffee shop. Or, Our playground is **behind** the school.*

Song: *Treasure Search*

The lyrics to the song are below. When you listen the first time, model the suggested movements and encourage children to copy you. When you listen again, give children a chance to lead the group around the room.

| | |
|---|--|
| We're searching for treasure | (hand to forehead, look around) |
| On our map, there's a dot | (point to dot on map) |
| We'll look through the classroom | (look around) |
| And go find that spot. | (point away, to a "spot") |
| Let's walk with big steps, Heavy and long. | (model heavy, big steps to the big beat of the music) |
| Pretend we are pirates So big and so strong. | (show "strong" arms) |
| Dig under the sand; What do we see? | (pretend to dig down) (shrug shoulders) |
| Where is the treasure For you and for me? | (look around) (hands out to children then back to self) |
| Now let's tiptoe lightly From here to there. | (model tiptoeing quietly, small steps) |
| Pretend we are sneaking So quietly, with care. | |
| Let's peek over here What do we see? | (pretend to open a box) (shrug shoulders) |
| Where is the treasure For you and for me? | (look around) (hands out to children then back to self) |
| Let's do a silly walk Sideways, like a crab. | (shuffle sideways across the room) |
| Shuffling around Until treasure we nab! | |
| Let's look between trees What do we see? | (pretend to look between some trees) (shrug shoulders) |
| Here is the treasure For you and for me! | (smile, happy eyes) (high five to each child) |

Making Literacy Connections

Share the following book with children as an opportunity to deepen their understanding of spatial relationships. The literacy extension activity below suggests another play-based experience to build spatial awareness.

Suggested Book: *Rosie's Walk* by Pat Hutchins

AS YOU READ:

This story takes the reader along Rosie the hen's daily walk. As she walks, she is followed by a fox. Although the fox tries to catch up to Rosie, he is not successful. Rosie arrives home in time for dinner. The story uses rich spatial language to describe Rosie's path—"across the yard...around the pond" and so on. Since children may already be familiar with this book, as you read:

- Pause at the spatial word on each page. Use your fingers to show the movement that the Fox or Rosie is taking (around, over, through, etc.). See if children can "fill in the blank" with the accurate spatial term (doesn't necessarily have to be the one in the book as long as it makes sense).
- This book was first introduced in Activity 11's *Collecting the Garbage* activity. If you used the suggestion to develop hand gestures to match each of the spatial words in the book (across, around, over, past, through, and under), use them again today. Encourage children to join in.
- If children are familiar with the story, you might turn the reading activity over to them and allow children to tell you what is happening on each page using the illustrations as a guide. Be sure to emphasize the spatial words that describe the position of the Fox and Rosie.
- This time as you read, ask children to imagine what the Fox is feeling (hungry, frustrated, determined, disappointed, etc.).

BUILD ON THE BOOK:

Materials: Objects or spaces in your classroom that children can go across, around, over, past, through, and under. 1 index card per child.

Preparation: Develop a set of "spatial challenges" on each of the index cards. Each challenge should use a spatial term like: "Step over the stuffed animal," "Crawl through the play tunnel" or "Walk around the chair." Draw a simple image and use arrows to illustrate the location and spatial term so children can "read" it on their own.

Tell children that they will have a chance to be like Rosie and walk through the classroom. Ask the children to line up. Let the line leader choose a card and describe what they see ("step over the line of blocks"). Let the line leader take the group to that area and complete the spatial instruction. Let the next child in line become line leader (first child moves to end of line). The new line leader chooses a card and describes/follows the spatial instructions with peers doing the same behind them. Continue with new line leaders until each child has had a chance to choose a card. If time allows, shuffle the cards and repeat the game for another round.

Handout 1: Treasure Chest



Handout 2: Spatial Language

Over

On top

Under

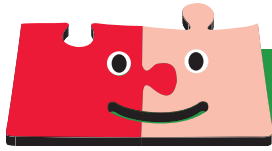
Next to

In

In front of

Behind

Between



Just for Families

Learning About Locations

This week, we're learning about words that describe the location of objects and places:

- In
- On Top
- Under
- Next To
- Behind
- In Front
- Between

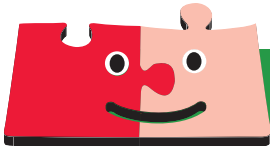


Walk outside with your child and talk about the location of your home: What is it **next** to? What is it **across** from? What is in **front** of your home? What is **behind** your home?

As you take your child on daily chores and trips around the community, talk about their location.

- The supermarket is **next to** the drug store
- Our apartment is **across** from the bus stop
- The laundromat is **beside** the corner store
- We walk **through** the turnstile at the subway station
- We go **down** the hill to get to the park

Using these descriptive words helps your child develop a strong math vocabulary!



Solo para familias

Aprender sobre las ubicaciones

Esta semana, estamos aprendiendo sobre palabras que describen la ubicación de objetos y lugares:

- En
- Encima
- Debajo
- Al lado
- Detrás Frente
- Entre



Camine afuera con su hijo y hable sobre la ubicación de su hogar: ¿Qué es lo que está **al lado**? ¿Qué está al cruzar? ¿Qué hay **frente** de su casa? ¿Qué hay **detrás de** su hogar?

Mientras lleva a su hijo a las tareas diarias y a los paseos por la comunidad, hable sobre su ubicación.

- El supermercado está **al lado de** la farmacia
- Nuestro apartamento está **frente** a la parada de autobús
- La lavandería está **al lado de** la tienda de la esquina.
- **Pasamos por el** torniquete de la estación del metro.
- **Bajamos** la colina para llegar al parque

¡El uso de estas palabras descriptivas ayuda a su hijo a desarrollar un fuerte vocabulario matemático!