

Problem Solvers Activity 24: Chilly Patterns

CHILDREN ARE LEARNING TO...¹

- Recognize a simple pattern.
- Duplicate and extend AB patterns. (At least 3 repetitions are required to establish a pattern, for example: A-B, A-B, A-B.)

MATERIALS NEEDED:

Blanket or sheet

Piece of construction paper

Handout 1: Mitten-Hat Pattern Card

Handout 2: Mitten

Handout 3: Hat

Handout 4: Emperor Penguin

Handout 5: Snowy Owl

Handout 6: Harp Seal (optional)

PREPARATION:

- Review **Background Information on Teaching Patterns** found in Activity 13.
- Print **Handout 1: Mitten-Hat Pattern Card**. Glue the pattern to a manila folder or piece of cardboard to make it sturdy.
- Print 6 copies of **Handout 2: Mitten**. If possible, laminate or cover with clear contact paper.
- Print 6 copies of **Handout 3: Hat**. See note above regarding lamination.
- Spread **Handouts 2 and 3** in a messy pile on the floor. Cover with a blanket or sheet.
- Set aside the construction paper until the **Expand** activity.
- Make 12 copies of **Handout 4: Emperor Penguin**.
- Make 12 copies of **Handout 5: Snowy Owl**.
- For the **Explore** activity, arrange animal pictures into two sets. In each set, include 6 copies of **Handout 3: Penguins** and 6 copies of **Handout 4: Snowy Owls**.
- If you are implementing the “more challenging” variation of the **Explore** activity, make an additional 10 copies of **Handout 6: Harp Seal**. Instead of the instructions above, make 2 sets of animal pictures with each set containing: 5 penguins, 5 harp seals, and 5 snowy owls. Set aside animal sets until the **Explore** activity.
- Print parent handout, one per child.

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>

Activity Instructions

ENGAGE

Gather a group of 4 children.

ASK: Does anyone know what season it is now? It's winter. What happens when it's winter time? Is it warm or cold during the winter? What kind of winter weather do we see? What do we wear to stay warm? *Using questions like these, engage children in a discussion of what they know about winter weather. Be sure to ask what they wear during the winter. Ask about outdoor clothing (mittens/hats) if they don't share.*

If you live in an area that doesn't get very cold in the winter, reframe the question to ask: *In places where it's very, very cold in the winter, what do children wear? Why do children wear those clothes?*

SAY: Let's play a game with two important pieces of winter clothing: Mittens and hats!

EXPAND

SAY: Problem Solvers, I want to share a winter pattern with you. My winter pattern shows some important clothing we wear to keep warm. Let's discover my pattern!

Show children Handout 1: Mitten-Hat Pattern Card.

ASK: What do you see on my winter pattern? *Point to the first mitten image.* What's this? Yes, a mitten! *Point to the first hat image.* And what's this? That's right, a hat to keep our heads warm.

SAY: Let's say my winter pattern together! Mitten, hat, mitten, hat, mitten, hat, mitten, hat. *Point to each image as you and the children say the pattern.* The rule for my pattern is one hat, then one mitten, one hat and then one mitten. *Place the pattern card where children can see it.*

SAY: But children, I have a problem! I made a winter pattern for you on the floor but the wind blew all of my pictures out of order. Can you all blow like the wind? *Lift up the blanket to show the messy pile of pictures.* My pattern is a MESS! Now we have to solve the problem, Problem Solvers, and put our pictures back in their pattern!

SAY: Let's use my winter pattern card as a clue. What picture does my pattern start with?

Encourage children to take turns "solving the problem" of putting the pattern back together. Prompt children with questions like:

What did my pattern start with?

What comes next?

Who remembers the rule for my pattern?

Review the pattern by asking the children to line up behind the first picture in the pattern. Ask children to step (or hop) on each picture as they say the pattern. Give each child a turn to step on the images and name the pattern. Have children return to sitting when they are done.

SAY: Uh-oh! I hear the wind! (Put your hand to your ear.) The wind is coming! Can you blow like the wind? You blew away part of our pattern! *Cover one mitten image in the pattern with construction paper.*

ASK: Problem Solvers, what can we do to figure out what belongs in this space? *Wait to hear children's thinking.*

NOTE TO TEACHERS

If you make color copies of the **Handout 1: Mitten-Hat Pattern Card**, another element of the pattern is color: red, blue, red, blue. Children may notice and name this when they see the card. If children are 3 ½ - 4 years old, you can also point it out: *Problem Solvers, I just noticed that our pattern has another rule. First we have red, then blue, red, blue, red, blue.*

If they are struggling, point to each picture in the pattern and encourage children to chant the pattern with you until they have identified the missing image. Or you can show them the pattern card to review the pattern. You can also prompt them by asking: Let's think back to the rule of our pattern. That will give us a clue to what's missing! When they have identified the missing piece of the pattern, remove the construction paper to show the mitten image.

SAY: Now, can all of you blow like the wind again? As children blow, cover one hat image in the pattern. Repeat the problem-solving process as described above.

SAY: Let's explore our pattern another way. *Point to the first Mitten image.* Where do mittens go? That's right, on our hands! Can you lift your hands in the air to show me where your mittens go? *Point to the first Hat image.* Hmmm, here's a hat. Where do we put a hat? On our feet? No! On our heads! Can you pretend to put a hat on your head like me? *Pretend to put a hat on.*

SAY: Let's repeat our pattern one more time. But this time, we're going to use our hands too! When I say "Mitten," hold up your hands. When I say "Hat," put on your pretend hat. Are you ready?

Repeat the pattern once more. This time, as you say each part of the pattern, model the movement that goes with it: Mitten (hands up), Hat (put hat on), and repeat.

If time allows: Invite the children to "be the wind" and blow the pattern into a pile again. Together, put it back in its pattern. When you are done, pick up all the pictures so there is space for the next activity.

SAY: Thank you, Problem Solvers, for helping me fix my pattern! Now let's play a pattern game with winter animals.

EXPLORE

As you transition into the Explore activity, take out the two sets of Penguin/Snowy Owl images.

For children aged 2 ½ to 3 years, play *Winter Animal Patterns* (explained below) **as a group.**

For children aged 3 to 4 years of age, play *Winter Animal Patterns* as partners.

SAY: Do you know that there are some animals who live in very snowy, cold places? We are going to learn about two animals that love cold weather. Are you ready, Problem Solvers?

SHOW children a snowy owl picture.

ASK: Does anyone know this animal? It is a bird. It's a very special kind of bird called a *snowy owl*. Can you say that with me: *snowy owl*.

Snowy owls have bright yellow eyes. Can you see them? Snowy owls eat small animals like mice and rabbits. Their thick feathers keep them warm all winter long. Let's pretend to be snowy owls and flap our wings and fly! *Model pretending to fly and encourage children to join in.*

SHOW children an emperor penguin picture.

ASK: Does anyone know this animal? It is a penguin, an *emperor penguin*. Let's say that together: *emperor penguin*. Emperor penguins are very big—about four feet tall (*hold your hand up to show children*). They eat fish. Emperor penguins are birds with thick black and white feathers but—guess what? Penguins don't fly! Instead, penguins swim in the water and waddle on land. Can you say the word **waddle**? Let me show you how penguins **waddle**. *Demonstrate a penguin waddle.* Can you **waddle** like a penguin with me?

SAY: Let's make an animal pattern together. I need your help, Problem Solvers!

THREE REPEATS RULE

Generally children need to see **3 repeats of a pattern** to understand its rule. So when introducing a new pattern, be sure to show/label the parts of the pattern at least 3 times before asking children what comes next: red, blue, red, blue, red, blue. Or: cat, dog, cat, dog, cat, dog.

ASK: Let's make a pattern like our hat and mitten pattern: hat, mitten, hat, mitten, hat, mitten. The rule for that pattern was first a hat and then a mitten. (*Show children the pattern card as you say the pattern.*)

ASK questions as you work like: What animal should we use first in our pattern? What animal should we put down second in our pattern? *Place the two pictures on the floor.*

SAY: For our new pattern, we have these two animals: first a _____ and then a _____. I guess that's the rule for our animal pattern! Who can show me what animal comes next?

Repeat the animal names aloud and point to the pictures if children need help.

Continue placing the pictures in an AB pattern and asking children to say the name of each, until you have used all of the images.

SAY: Let's explore our pattern together, Problem Solvers. Would someone like to be my helper? Ask a child to stand behind the first picture (so children can continue to see the pattern) and say the animal's name, then step forward to the next picture. The group should chant the animal names as their peer walks along the pattern: owl, penguin, owl, penguin, owl, penguin.

SAY: Now let's try our pattern a different way. Instead of saying the animal name, we'll do its movement! Who can show me how a snowy owl flies? Who can show me how a penguin waddles? Okay, let's try it! Everybody stand up!

SAY (as you point to each picture): Snowy owls fly, penguins waddle, fly, waddle, fly, waddle, fly waddle. *Demonstrate each movement with children as you say it.*

Pick up the pictures and mix them up.

SAY: In this game, you and your partner will get pictures of snowy owls and emperor penguins. You can work together to make a pattern on the floor using your pictures. *Divide the group into two pairs and give a set of animal pictures to each pair. Direct each group to a place on the floor where they will have enough space to lay their pictures in a pattern.*

Observe children to see how they are able to create/repeat a pattern using these two animals. If they are having difficulty, step in to provide support by:

- Naming the two animals and asking which they'd like to start with.
- Repeating the animals they chose aloud: *First penguin, then owl. That's the rule of your pattern. Then we start over. What animal comes next?*
- Observing the repeat of the pattern they are creating: *I see you are putting a penguin down, then an owl, then a penguin, then an owl. I guess that's the rule of your pattern!*

Note: you might also see that children choose to create a more complex pattern (AAB or ABB) which is also fine.

If you see errors (very common for this age), observe aloud: *Problem Solvers, let's check our work and say our pattern from the beginning.*

- Point to each picture in the pattern and encourage children to name it with you. Wait to see if they notice the error and self-correct.
- If not, you can observe: *The rule of your pattern is: first owl, then penguin. Let's look at the pictures in your pattern. Let's say your pattern together to make sure every picture follows the rule.* (With the child/ren, say the pattern out loud. As you do, pause before the incorrect portion and ask:) *What comes next?*

When children are done, have the pair tell you about their pattern. Then ask them do it again—but this time, perform the movement pattern for each animal.

REFLECT

SAY: Problem Solvers, let's talk about the pattern problems we solved today. Can you share what problems you helped to solve? What was your favorite pattern today? Does anyone remember a pattern from our games today?

WRAP-UP: Today we talked all about winter and made patterns with mittens and hats, and patterns with cold weather animals! Now you get to choose whether you fly like a snowy owl back to our class or waddle like an emperor penguin!

Individualizing the Activity

MAKE IT MORE CHALLENGING:

- In the **Expand** group activity, consider adding another picture of winter clothing (a snowsuit or scarf) and model an ABC pattern, instead of an AB pattern. You will need to make 6 copies of this new image and identify a movement that goes with it. You could also make additional copies of mittens and hats, and model an AAB (mitten, mitten, hat) or ABB (mitten, hat, hat) pattern.
- For the **Explore** activity with partners, include the harp seal image. Give children sets of three images (5 each of snowy owl, emperor penguin, and harp seal). Demonstrate an A-B-C pattern by first constructing this pattern as a group and then asking pairs to recreate this pattern on their own. At the end, have each group say their pattern and then repeat the pattern using the animal movements. Use the following information to introduce the harp seal: *Harp seals have thick fur and lots of blubber, or a thick layer of fat, to keep them warm in cold weather and cold water. When harp seals are born, they have white fur but then their dark fur grows in. They eat fish and shellfish. Harp seals spend their time diving and swimming in icy cold water. Can you pretend to dive like a harp seal with me?*
- For the **Explore** activity, the teacher could also demonstrate a different type of pattern—AAB (owl, owl, penguin) or ABB (owl, penguin, penguin). **Teachers should demonstrate three repeats of the pattern** before asking children what they think should come next.

MAKE IT LESS CHALLENGING:

- Focus only on the picture names (not the movements) for these activities.
- For the **Expand** activity, use **Handout 1: Mitten-Hat Pattern Card** as a model to assist children in identifying the next picture in the pattern.
- For the **Explore** activity, use only two animals and work as a group to create the pattern.

MAKING CONNECTIONS ACROSS THE DAY:

- Use A-B patterns across the day—for example, before reading a story, engage children in a *clap your hands, tap your knees* pattern to help them focus their attention.
- Notice patterns in the environment. Your classroom ceiling may have a pattern of: one ceiling tile, one light. Or your floor tiles may have a pattern: white, blue, white, blue.
- Notice patterns that children are wearing (like red/blue stripes).
- Make and name patterns at lunch and snack time: apple slice, cracker, apple slice, cracker.
- Sing songs (like *Are You Sleeping?*) with patterns. Share rhymes and fingerplays with patterns (like *Where Is Thumbkin*).

Making Literacy Connections

Share the following book with children as an opportunity to deepen their understanding of patterns. The literacy extension activity below suggests another play-based experience to invite children to practice patterns.

Suggested Book: *Jesse Bear, What Will You Wear?* by Nancy White Carlstrom

AS YOU READ:

Jesse Bear, What Will You Wear? takes us through Jesse Bear's day, at each point asking, "Jesse Bear, what will you wear?" The pattern of asking this question is repeated throughout the story. Use the questions and prompts below to help children better understand patterns.

- After children are familiar with the story, you can pause and let children finish the question pattern that is repeated throughout the story: "Jesse Bear...(what will you wear?)."
- Make the connection between the book and real life. Pause and ask children what they wear on a sunny day, or at night-time. Do they ever get food on their clothes at noon (lunch time)?
- Use this story as an opportunity to encourage children to notice and make rhymes. For example, when you read the page, "I'll wear the sun/ On my legs that run/ Sun on the run in the morning," you might pause and observe: "I hear two words that rhyme. A rhyme is when two words sound almost the same, but have a different starting sound. **Sun** and **run** rhyme." Pause on these pages and ask if children "hear a rhyme."
- This story has a repeated pattern of the question ("What will you wear?"), but it also takes readers through the pattern of the day. Talk about this pattern with children: morning, lunch-time, night-time. What do they do at each time of day? Create a classroom schedule (with pictures representing each major daily activity) so children can follow the daily pattern.

BUILD ON THE BOOK: MAKE A "CLASS BEARS, WHAT WILL YOUR WEAR?" BOOK

Materials: blank pieces of paper (one per student), markers, photos of each child, three-hole punch, thin binder

For each child in the class, write on top of a page: "[Child Name] Bear, what will you wear?" Show each child the picture you have taken of them and ask them this question. Write their response on "their" page. Let the child glue their photo to the page. Punch holes in each page and place in a binder. Share your "Class Bears, What Will You Wear?" book at story time. Let children take turns bringing the book home and sharing it with their families.

Handout 1: Mitten-Hat Pattern



Handout 2: Mitten



Handout 3: Hat



Handout 4: Emperor Penguin

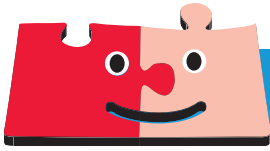


Handout 5: Snowy Owl



Handout 6: Harp Seal





Just for Families

Playing Together: Big Shoe, Small Shoe

Young children notice patterns— in clothing, in songs, in rhymes, and in the world around them.



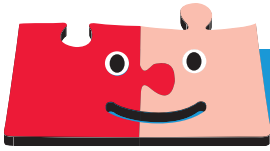
This activity helps your child learn how to make a pattern with you!

Gather 4 adult shoes and 4 of your child's shoes. Show these to your child. Notice together how some of the shoes are big and some are small.

Ask your child if they want to help you make a big and small pattern. Should the two of you start with a big shoe or a small shoe? Let your child decide.

If you start with a big shoe, your pattern will be *big shoe, small shoe, big shoe, small shoe*, and so on. Together, you can make a long line of shoes! When you are done, ask your child if they want to say the pattern together with you: Big! Small! Big! Small!

See if your child wants to mess the pattern up and try again! Or choose a different set of shoes. You can also make a pattern with two pairs of socks in different colors, forks/spoons, or two different toys (blocks/cars).



Solo para familias

Jugando juntos: Zapato grande, zapato pequeño

Los niños pequeños se dan cuenta de los patrones — en la ropa, las canciones, las rimas y en el mundo



que los rodea. ¡Esta actividad ayudará a que su niño aprenda cómo hacer un patrón con usted!

Consiga 4 zapatos de adultos y 4 de los zapatos de su niño. Muéstreselos a su niño. Observen juntos que unos zapatos son grandes y otros son pequeños.

Pregúntele a su niño si quiere ayudarla a hacer un patrón de grande y pequeño. ¿Deberían empezar con un zapato grande o con uno pequeño? Deje que el niño decida.

Si empieza con un zapato grande, el patrón será *zapato grande, zapato pequeño, zapato grande, zapato pequeño* y así hasta terminar. ¡Ustedes dos juntos pueden hacer una línea larga de zapatos! Cuando terminen, pregúntele a su niño si quiere decir el patrón junto con usted: ¡Grande! ¡Pequeño! ¡Grande! ¡Pequeño!

¡Vea si su niño quiere deshacer el patrón y tratar de hacerlo otra vez! O elija un grupo de zapatos diferentes. También puede hacer un patrón con tamaños o colores diferentes de medias, tenedores y cucharas, o dos juguetes diferentes (bloques/carros).