Preschool/TK/K

Animal Islands

The purpose of this activity is for children to compose and decompose numbers in different and meaningful ways. Children will decompose a set of objects into two smaller sets. They will use a spinner to determine how many objects to move into the first set. Then, children will combine the objects in the two smaller sets to form a larger set.

Key Concepts

- Number decomposition: Break numbers into two smaller sets.
- Number composition: Combine two sets of numbers into one larger set.

Materials and Setup

- Two "boats"—small containers of different colors (for example, a blue basket and a red basket)
- Two "islands"—large containers or two large sheets of paper
- Toy animals small enough to fit in the small containers (use any object that is interesting or meaningful to the children)
- Spinner with numbers 1–5 (change the numbers to add more challenge; for example, 1–10)

20 minutes

Small groups, pairs

Large indoor/outdoor space, on the floor, or small group table

Activity Instructions

Optional: Invite children to make or decorate boats that they will use to move objects.

Animal Islands Game

1. Invite children to a large open space in your learning setting. This may be an indoor or outdoor space. Encourage children to create two "islands" by placing two large containers (or large sheets of paper) in different spaces.
2. Place five objects (for example, toy animals) on one island. Invite children to count the objects.

3. Explain to the children that the five animals on this island want to go to the other island. To get there, they will take two boats.
4. Model how to play the Animal Islands game:
    a. Spin the spinner to land on a number 1–5.
    b. Move the number of animals that the spinner lands on into the first boat. Explain this process to children. For example, "I got a [number that the spinner lands on]. That means [number] animals can go in the red boat. Let's move [number] animals to the red boat!" Count the animals as you move them.
    c. Say, "Let's see how many animals are left." Encourage children to count the remaining animals with you. Then, move them to the blue boat.
    d. Describe what happened. For example, say, "The group of five animals is broken up into a group of [number of animals in the red boat] and a group of [number of animals in the blue boat].
    e. Move the boats to the new island. Encourage children to do this in a playful way. For example, say, "We are ready to set sail!"
    f. Move each animal from their boats to the island, counting each as you go.
    g. Encourage children to figure out how many animals are on the island. Support children to count all of the animals on the new island.
    h. Support children to think about number composition. For example, say, "That means [number of animals in the red boat] and [number of animals in the blue boat] together make five.
5. After showing children how to play, encourage them to help the animals get back home to their original island.
6. Invite children to spin the spinner and move the animals as was described above.
7. Support children to take turns spinning, counting, and moving the animals between the different islands.

Note: You might choose numbers other than five to compose and decompose based on the abilities of the children you are working with. The number of objects you use and the numbers on the spinner should be the same (for example, if you are using four animals/objects, your spinner should have the numbers 1, 2, 3, and 4).

Using M^5 to Support Children to Compose and Decompose Numbers

This section offers ways to use the M5 Early Math Approach to support children to compose and decompose numbers.

Mutual Learning

- Observe and learn about children's emerging math skills. Notice how they compose and decompose the sets of animals throughout the game.
  - What counting strategy do they use when counting the two sets of animals?
  - "I heard Aurora count on from three! Can we all try to count on from three?"
- Adapt the activity based on children's math abilities. For example, you may gradually increase the number of animals that children are working with.
- Notice the languages children use. Encourage multilingual learners to use their home language and/or English. Children may need different levels of support in each of their languages.
- Create different versions of this activity based on your knowledge of children's interests, cultures, and lived experiences. For example,
  - If children are interested in cooking, they could move different food items (instead of animals) from the shelf into a pot (instead of an island).
  - If children are interested in soccer, they could kick balls (instead of moving animals) into a net (instead of islands).
  - Educators might invite families to share objects and containers from home.

Meaningful Math Investigations

- The Animal Islands game provides children with a meaningful math investigation that allows them to experience composing and decomposing numbers. The context of the experience (helping the animals get to a new island) provides a problem that children might be interested in solving. The experience is also open (children can explore different ways to make sets) and is hands-on (children are able to physically move concrete objects).
- Provide children other opportunities to compose and decompose to solve problems. For example,
  - When setting the snack table, provide children with different colored cups. Invite them to think about how many friends received a blue cup, how many friends received a red cup, and how many friends we have all together.

Materials and Learning Environment

- Provide containers and objects for children to use to separate and combine objects in different ways.
- Consider your outside spaces. Arrange play equipment and objects (for example, balls and baskets, buckets and shells or rocks) to invite children to compose and decompose objects into sets.

Math Vocabulary and Discourse

- Count aloud with the child as they move animals from the island to the boats and from the boats onto the new island. Encourage children to chant with you to practice counting.
  - "Let's count each animal that goes in the red boat. One animal, two animals, and three animals. There are three animals in the red boat."
- Use language to model thinking about composing and decomposing.
  - "There were five animals on the island. We moved them into different groups. Two of them are in the red boat, and three of them are in the blue boat."
- Ask questions that encourage children to count, add, and subtract.
  - "How many animals are on the red boat?"
  - "How many are on the blue boat?"
  - "Two animals get out of the red boat and three animals get out of the blue boat. How many animals are there all together?"
  - "Two animals got in the red boat. How many animals are left on the island?"
  - "What happens if we move one animal from the red boat to the blue boat?"