Activity: Children will analyze pictures of objects to see if they are examples of symmetry or non-symmetry. Each child will construct a ladybug and explain whether or not it is an example of symmetry or non-symmetry.

Objective

The children will analyze and construct examples of simple symmetry and non-symmetry in two dimensions, using concrete objects.

V. Mathematical Thinking

V.D.2. Describes, sorts and classifies two– and three– dimensional shapes using some attributes such as size, sides and other properties (e.g., vertices)

http://www.floel.org/standardsresource/standards.html#d=V&a=four_year_olds

Materials Needed

- Picture cards with examples/non-examples of symmetry
- Poster board, markers, Velcro or tape, index cards
- A variety of art materials for making ladybugs
- Books: The Ladybug and Other Insects by Pascale de Bourgoing and A Ladybug's Life by John Himmelman

Checking for Understanding

Children will demonstrate their understanding of the lesson by:
- analyzing pictures of objects to see if they are examples of symmetry or non-symmetry
- constructing examples of symmetry and non-symmetry.

Scaffolding

- Provide children with additional support by using dry erase boards and magnets to create examples of symmetry

Extensions

- Reading/Literacy: Include insect hand puppets and a variety of fiction and non-fiction books about ladybugs and other insects.
- Listening: Add books about ladybugs and other insects.
- Art: Show children how to fold paper in half and cut on the fold to create symmetrical shapes or objects.
Ladybugs

**Activity:** Children will analyze pictures of objects to see if they are examples of symmetry or non-symmetry. Each child will construct a ladybug and explain whether or not it is an example of symmetry or non-symmetry.

**Continued:**

3. Explain to the children that today you are going to learn two new words. Show a symmetry picture card (e.g., ladybug) and say, “Our first word is ‘symmetry’.” Say, ‘symmetry’. (Wait for the children to respond.) Yes, that’s right ‘symmetry’. Symmetry is when you have parts that are exactly the same on both sides of a line that divides an object down the middle. When an object has symmetry we say that it is symmetrical. Now, I am going to show you some pictures of symmetry.” Show children the other picture card examples of symmetry.

4. Show a non-symmetry picture card (e.g., teddy bear) and say, “Our second word is ‘non-symmetry’.” Say, ‘non-symmetry’. (Wait for the children to respond.) Yes, that’s right ‘non-symmetry’. Non-symmetry is when you do not have parts that are exactly the same on both sides of a line that divides an object down the middle. When an object does not have symmetry we say that it is not symmetrical. Now, I am going to show you some pictures of non-symmetry.” Show children the other picture card examples of non-symmetry.

5. After the children have seen all of the picture cards, explain that now you will analyze (look at) some picture cards to determine if they show examples of symmetry and non-symmetry.

6. Pass out a picture card to each child. Ask the children to look at their picture card and decide if it shows an object that has symmetry or non-symmetry. Have the children choose which column (e.g., symmetry or non-symmetry) their picture card should go under on the poster. Allow each child to put his/her picture card on the poster.

7. Repeat step eight until all of the picture cards have been sorted.

**Day 2**

1. Review the definitions of symmetry and non-symmetry.

2. Read *The Ladybug and Other Insects* by Pascale de Bourgoing and point out pictures that show the symmetry of the ladybug’s wings as you go through the book.

3. Allow the children to create their own ladybugs and use the spots on the wings to create a ladybug that has symmetry or non-symmetry.

4. Ask each child to explain if their ladybug has symmetry or non-symmetry and how they know (e.g., “The ladybug has symmetry because it has the same number of spots on each wing. The ladybug has non-symmetry because it has a different number of spots on each wing.”).

Create a classroom display that sorts the ladybugs into the categories of symmetry or non-symmetry.