1. Marbles and Lego

1 hour

Sorting marbles and bricks by rolling the marbles away from the Lego.

OBJECTIVES

- To distinguish between an object and the material from which it is made.
- To identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.
- To describe the simple physical properties of a variety of everyday materials.
- To compare and group together a variety of everyday materials on the basis of their simple physical properties .
- To use their observations and ideas to suggest answers to questions.

RESOURCES

(Per group of 4 children unless otherwise stated)

- 20-30 marbles, minimum (or conkers, counting beads, etc.)
- 20-30 Lego bricks, minimum (6-8 peg pieces)
- 3 tubs
- Tray[1]
- Tea-towel[1]
- Activity sheet 2, made into story cards and/or
- Activity sheet 3, made into prompt cards[1] and/or
- Activity sheet 4 (per child)

INTRODUCING THE ACTIVITY

The children are given a tub of Lego bricks and marbles mixed together, as shown in the storybook. The story card is used to encourage the children to think of their own ideas of how they might separate the marbles and bricks without lifting them out one at a time, e.g. fixing all the Lego bricks together, adding water to see if the bricks would float, taping card over most of the tub to 'pour out' the marbles, blowing bricks up a sloping surface away from the marbles, etc.

The children can use Activity sheet 4 to record the activity. More able children could use this sheet to record predictions before carrying out their test, record what they do and give reasons for the outcome.

1 Denotes items required for a structured rather than an open-ended approach.

For a more structured approach, the teacher can provide extra information with prompt cards or questions to encourage the children to think about the differences between the two types of objects that they want to separate. This should lead the children to think about marbles being round and the bricks having corners, and how the round marbles roll but the bricks do not.

The following questions may help promote ideas:

- How might you sort the marbles and Lego bricks?
- How are the marbles different from the Lego bricks?
- What else is the same shape as a marble?
- Do marbles/Lego bricks move easily?
- How do marbles move down a slope?
- Can you make a slope with this tray?
- What will happen if we put a tea-towel on the tray? Why?

The teacher can suggest using the tray, and ask how this might help the children separate the marbles from the Lego. The Lego and marbles may slide down the slope together, as a tray provides a smooth and slippery surface. Adding a tea-towel provides a rough surface to which the bricks stick. The children try to roll the marbles away from the Lego bricks, by shaking and sloping the tray and removing the marbles, several at a time, when they slide to one end.

EXTENSION ACTIVITY

Groups of children brain-storm methods which use the property of shape to sort objects, or where the property of shape is useful in other ways. Examples could include; wheels and balls being round to move or roll along the ground easily; games for pushing blocks through holes of different shapes; keys fitting key holes; assortments of biscuits in which varieties are separated into hollows of different shapes and sizes. They produce pictorial lists of their ideas and compare these with the lists of others during whole class discussion.