



Learning about Change and Constancy

Introduction

Explore your child's learning about the physical world

During the early school years children begin to understand that when something changes shape, its weight and volume remain the same. Try out the following activity which is based on a classic study in developmental psychology.

You'll need

Some water, three transparent plastic containers (one short and wide, and two tall and narrow) and a measuring jug. Remember some water may get spilt, so do this where water can't cause damage.

Activity

The idea is to see whether your child can understand that the amount of water stays the same even when it's put in different shaped containers.

Put the same amount of water into each of the tall and narrow containers, allowing your child to watch. Ask your child whether both containers have the same amount of water. Most children will agree that there's the same amount.

Then pour the water from one of the containers into the third different shaped container.

- Then ask if there's the same amount of water in this container (point to one) as in this one (point to the other one)?
- Depending on the answer, ask why they think the amount is the same or different.

Don't be worried if your child gives the incorrect answer, or if their explanation isn't very good. It takes a while to understand these issues. The main thing is for the activity to be fun.

Other things to try:

- Ask whether any water was added or spilt.
- Use the measuring jug to see if this helps them to change their opinion.

Remember it is better to let your child explain their own thinking rather than just telling them the correct answer.

The explanation

Some children's inability to understand that changes in shape do not result in changes in amount was first reported by Jean Piaget whom many regard as the most famous investigator of children's thinking. His findings showed that between 5 and 7 years children often have difficulty with what he called 'conservation' tasks.

Jean Piaget believed that children make mistakes because they focus on one dimension and 'forget' about the other.

So for example, a child might focus on the fact that in one container the water goes up 'higher' and so they would think there is more water in it. The child would not take account of the fact that this container was also narrower.

Investigators are now less sure that Jean Piaget's interpretation is correct, though most agree that young children often have difficulties with these types of activities. Some investigators think that these tasks don't make much sense to young children, and children do better when the outcome is of interest to them.

For example, children do better if they have to give exactly the same amount of a favourite drink to two friends, in different shapes of glasses.