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Activity 1

Peek Boxes

Investigation

Comparing how things look in the light and in the dark.

Skills

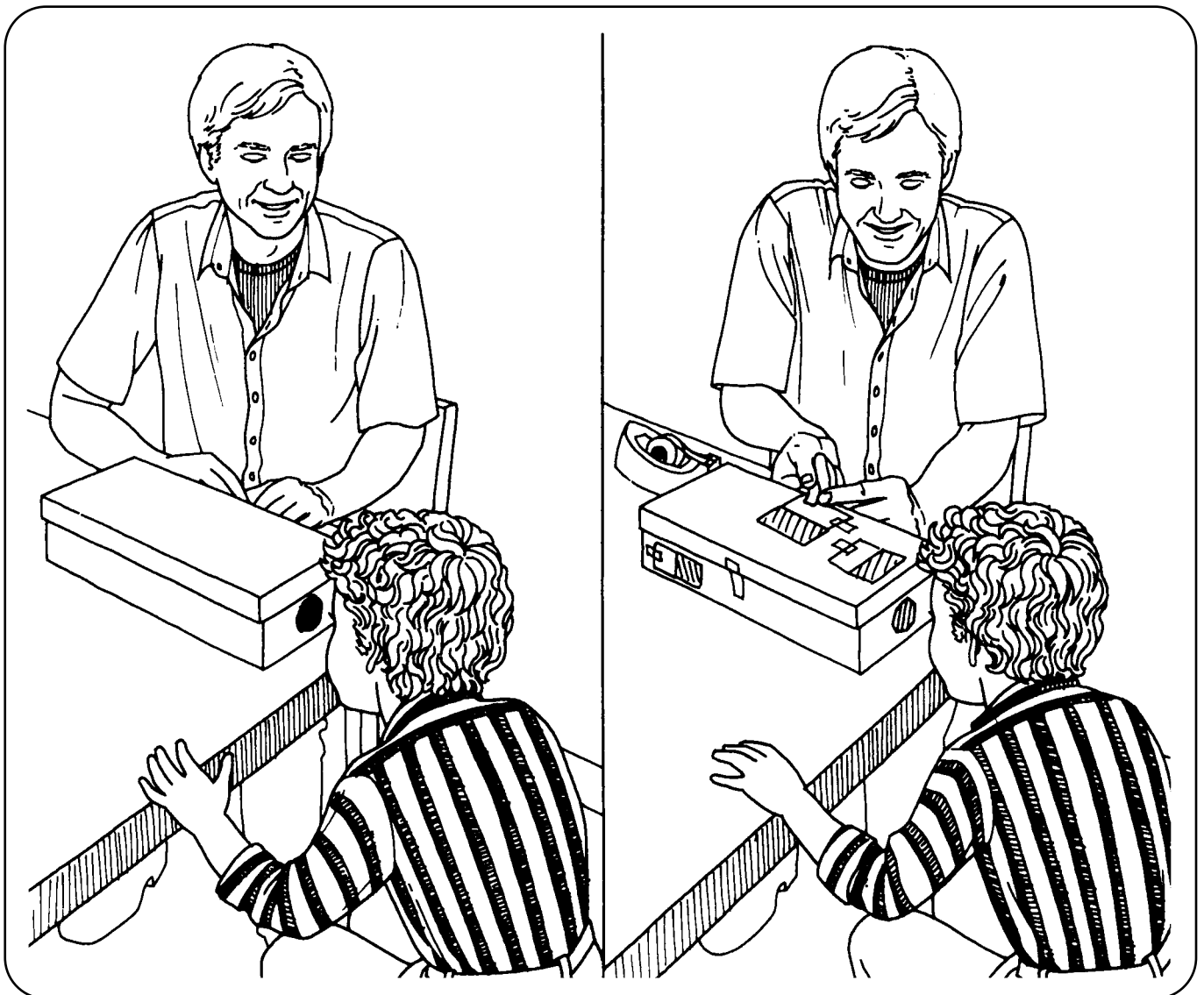
Observing visual changes ◇ Recognising cause-and-effect relationships ◇ Describing colour and shape ◇ Comparing before and after ◇ Classifying

Materials

Shoe boxes; colour photographs or pictures cut from magazines; utility knife; paste; tape; coloured paper cut to fit the end of a shoe box.

Setting Up

Cut a small eye hole in one side of a shoe box. Inside, at the opposite end of the box, paste a photograph or picture, then tape the box closed. Do this with each of the shoe boxes, choosing pictures with a variety of colours.



Starting Out

Give a box to each child or pair of children and explain that there is a picture in each. Have them look into the box through the peek hole. Ask:

- Can you see anything? Why not? (It is too dark.)
- What is needed for you to see the picture in the box? (Light.)

Guiding Children's Actions

1. Ask the children what they could do (other than opening the box) to make it possible to see the picture. If the children suggest cutting a slit in the box to let light in, ask them where they think the slit should go. Cut a small three-sided slit where they suggest, fold the door back and tape the slit open. (Cut slits in different places on different boxes,)
2. Have the children look inside to see if they can see the pictures. They will notice that the slit allows a small amount of light to shine in, but the light may not shine directly on the picture. Instead, since light travels in a straight line, it falls on the opposite side of the box from the slit. Only a small amount of reflected light falls on the picture.
3. Have the children tell what they can see in the picture. Use questions like these to guide their discoveries:
 - Can you see any colours? Which ones?
 - Can you make out any shapes?
 - What do you think is in the picture? Why?
4. Continue cutting small slits in the box in the locations suggested by the children until they are able to see the pictures clearly.

Stretching their Thinking

Close the slits in the shoe boxes and paste a different coloured piece of paper at the end of each box. Have the children look in the boxes to see if they can see the colour. They will probably discover that certain colours (yellow and white, for example) are easier to see in the dark than other colours (blue and black, for example). Label the sorting mat *Easy to See* and *Hard to See* and have the children place colour swatches in the proper column of the mat.

Activity 2

Dogs and Doghouses

Investigation

Observing colours against various backgrounds.

Skills

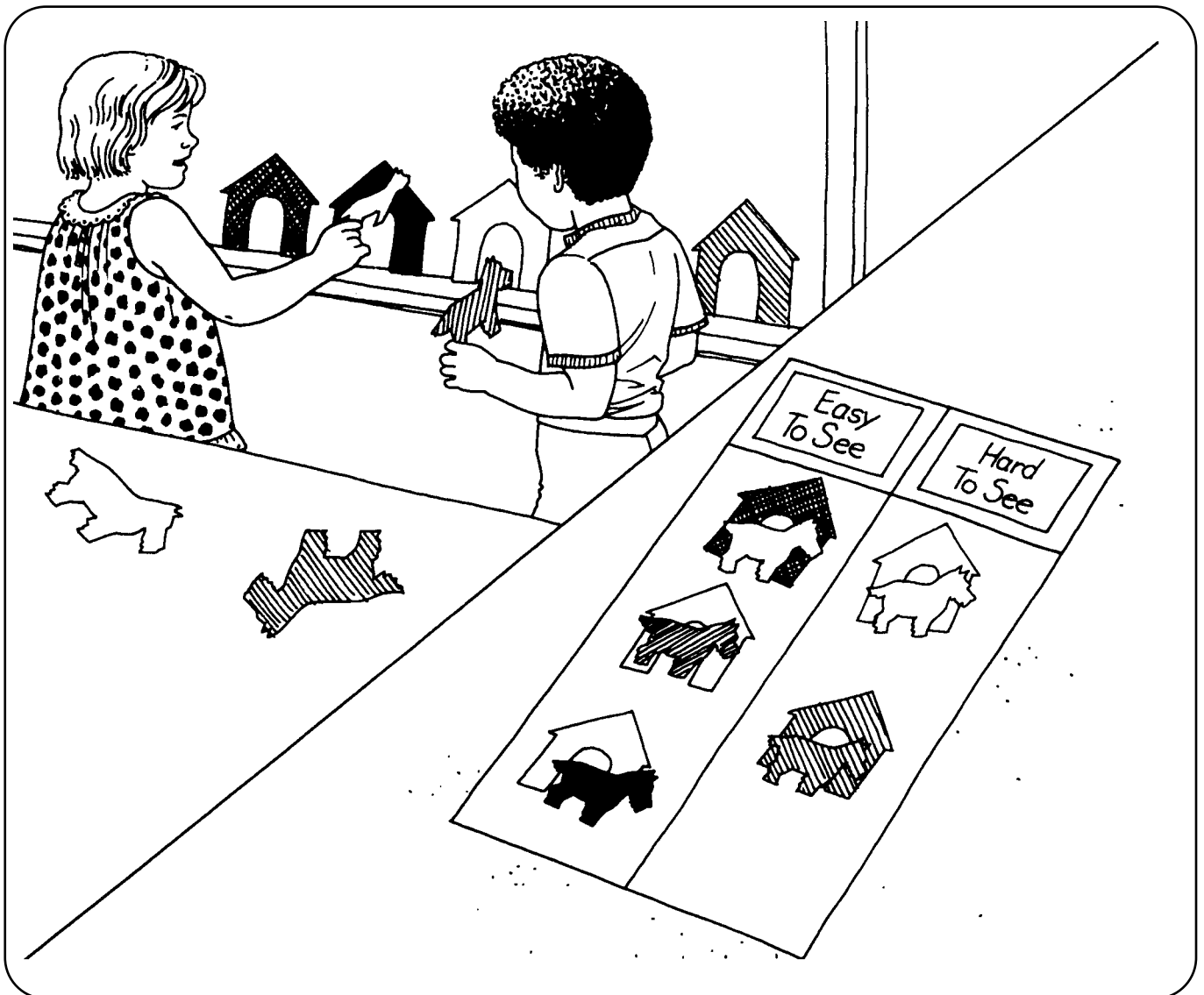
Comparing ✧ Generalising ✧ Classifying
✧ Recording sequential order

Materials

Cardboard; coloured paper; paste; sorting mat and sorting mat labels, *Easy to See*, *Hard to See*; colourful plastic toys; Dog and Kennel templates (see pages 76–77 for templates).

Setting Up

Use the templates and cut out several kennels in different colours and several pairs of dogs, each pair a different colour. Set out the kennels along a blackboard ledge where the children can see them. Have the sorting mat and labels ready to use later.



Starting Out

Give each child a pair of dogs, both the same colour. Have the children take turns putting their dogs in front of two different kennels. Let the children compare, and then talk about which dog is easier to see.

Guiding Children's Actions

1. When everyone has had a turn, let the children take turns with tasks like these:
 - Show where you would put your dog if you wanted to hide it. (Against the same colour.)
 - Show where you would put your dog if you wanted it to be seen easily. (Against a contrasting colour.)
 - Show where you would put a bright yellow dog if you wanted it to be seen. (Against a dark background.)
 - Show where you would put a yellow dog if you did not want it to be seen. (Against a yellow background.)
2. Introduce the sorting mat labelled *Easy to See* and *Hard to See*. Have the children choose two kennels – one that would make their dog easy to see and one that would make their dog hard to see.
3. Have them paste their dogs on the kennels and place them in the appropriate column of the sorting mat.

Stretching their Thinking

Divide the class into teams. Give a team several brightly coloured plastic toys to hide on the playground or in the classroom. Tell them that the toys must be in plain view, not hidden behind or under anything else. Suggest that they use what they have learned about colours to hide the toys. When they have hidden the toys, have the other teams try to find the toys. Record the order in which the toys were found by lining them up in a row. Talk about which toys were hard to find and why. Then give the toys to another team to hide.