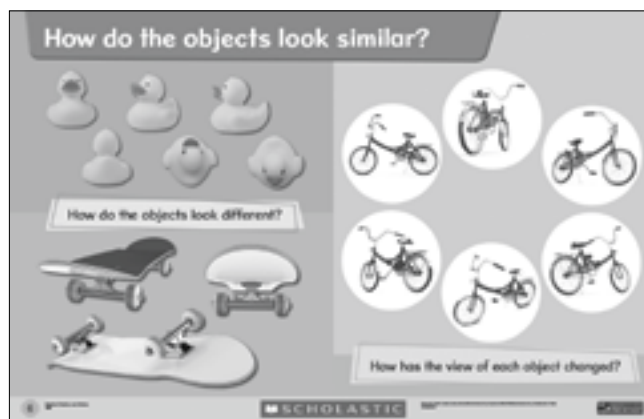


Describing the Position of an Object From Different Perspectives



Focus: Students view and describe the position of objects from different perspectives.

Specific Curriculum Outcomes

Students will be expected to:

- 37.0 describe the position of objects from different perspectives [GCO 1/3]
- 2.0 communicate using scientific terminology [GCO 2]

Performance Indicators

Students who achieve these outcomes will be able to:

- look at various perspectives of the same object and explain in what ways the object appears to be similar and different
- represent objects from different perspectives using drawings and oral descriptions
- describe the position of objects from different perspectives

NOTES:

Attitude Outcome Statements

Encourage students to:

- appreciate the importance of accuracy [GCO 4]
- willingly observe, question, and explore [GCO 4]

Cross-Curricular Connections

English Language Arts

Students will be expected to:

- communicate information and ideas effectively and clearly, and to respond personally and critically [GCO 2]
- create texts collaboratively and independently, using a variety of forms for a range of audiences and purposes [GCO 9]

Getting Organized

Components	Materials	Before You Begin	Vocabulary
• Science Card 6 • IWB Activity 5	• Rubik's Cubes (1 per group of 4 students) • large-grid graph paper • soccer ball • various board games	• Bookmark an aerial view of the local community on Google Maps™. • Select materials to mark the 'bases' in soccer baseball.	• perspective • point of view • front-view • back-view • side-view • top-view • bottom-view • near • far

Science Background

- The position of an object is relative and depends upon the reference point or perspective used to describe it. One student's reference point will result in a different description of an object's position from that of another student.

Possible Misconceptions

- Young students tend to view objects only from their own point of view. Encouraging them to change position when viewing a stationary object reinforces that while perspectives may change, the object does not change.

ACTIVATE



My Perspective

Place a Rubik's Cube (or other object) in the middle of four students. Have each student colour a 3 x 3 grid in their Science Journals to represent the side facing them. Students can then compare their representations with group members to illustrate how observations change based on perspective.



To reinforce this concept, have students move to personally view the object from each perspective. Invite students to post any questions they may have regarding perspective on the I Wonder Wall.

CONNECT



IWB Activity:

- Students can look at items viewed from different perspectives and identify the two that are the same using Activity 5: *A different perspective* (see the Teacher's Website).



Multiple Perspectives

Display Science Card 6 and have students examine the photos showing three objects from multiple perspectives. Discuss how the images differ depending on perspective. Ask:

- In what ways does the object appear to be similar?
- In what ways does it appear to be different?
- Has the object changed?

Clarify for students that the object has not changed, the perspective or point of view is different. Add the terms “perspective” and “point of view” to the Word Wall.

Have students identify the perspective in the images of each object on the card such as front-view, back-view, side-view, top-view, and bottom-view. Add these terms to the Word Wall.

Changing Points of View

Have two students sit in the centre of the room. Arrange the rest of the class into four groups and have them sit in a circle around the students in the 3, 6, 9, and 12 o'clock positions. Have groups collaborate to describe the position of one student relative to the other (e.g., in front of, behind, etc.). Invite groups to share their descriptions and discuss the differences. Help students to recognize that different perspectives result in differently described positions for an object that has not moved!

Aerial View

Project an aerial view of the local community using Google Maps™ and ask students to describe the position of a specific landmark from different perspectives (e.g., other landmarks or locations on the map).

CONSOLIDATE

Where's the Ball?

Take students outside or to the gym and play soccer baseball. Have several students describe the landing position of each kick in relation to the position they are playing (e.g., first base).

Here You Are

Invite students to view a photo of the class arranged on risers or stairs (See Here I Am in the Explore More section of *Describing an Object's Position*.)

and have them describe the position of one specific student relative to several other students in the photo.

Locating Rooms

Challenge students to work in small groups to create simple maps showing the location of the rooms in the school. Then ask students to describe the location of a specific room from the perspective of different classrooms in the school.

EXPLORE MORE

Board Games

Have students view board games and describe the position of a specific game piece from the perspective of the other game pieces. For example, you might randomly place chess pieces on a chessboard. After identifying the particular pieces for students, have them identify the position of the Queen from the perspective of the other game pieces on the board.