

ISTAR Science Sample Items for Grades 4, 6, and 10

This document provides examples of the types of items on the *ISTAR Assessment*. The sample items can serve as models when teachers are constructing items for classroom assessment. It should be noted that this document is not a practice test.

On this website, <http://www.doe.in.gov/assessment/alternate-assessments>, you may access other critical Science information related to the ISTAR Assessments, such as:

- Test Blueprints
- Instructional and Assessment Guidance, including the Content Connectors

Because students with significant cognitive disabilities are a diverse population with a variety of needs, it was important to develop items across a broad range of abilities. Three levels of items were created, called "tiers".

- **Tier 1** - Tier 1 questions use simple and direct language. Graphics are provided for most answer choices, along with text, which give students a visual support to answer the questions.
- **Tier 2** - Tier 2 questions are more complex than those in Tier 1. More introductory phrases may be included in the questions and fewer graphics in the answer choices than in Tier 1. There is a greater level of complexity in how students respond to the questions than in Tier 1.
- **Tier 3** - Tier 3 includes more detailed directions and questions. There is more text and few to no graphics in the answer choices. There may be more abstract ideas and inferencing in Tier 3. There is more complexity in how students respond to the questions than in Tier 2.

There are six sample questions with two items at each tier for each grade written to targeted standards and the corresponding content connectors, which show how the standard would be assessed differently for each tier.

These sample items represent standards that may be assessed during ISTAR Part 1 (Jan/Feb) and ISTAR Part 2 (April/May).

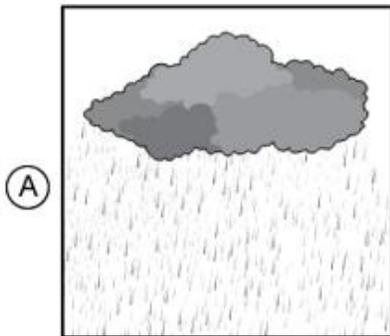
ISTAR Sample Items – Grade 4 Science

Sample Item Information for Teachers	
Grade: 4	Tier: 1
Key: A	Depth of Knowledge: 2 Link to DOK Wheel
Indiana Academic Standard: 4.2.2 Describe how wind, water and glacial ice shape and reshape earth's land surface by eroding rock and soil in some areas and depositing them in other areas in a process that occurs over a long period of time.	Content Connector: 4.2.2.a.1 Wind and water reshape the earth's surface by erosion and deposition.

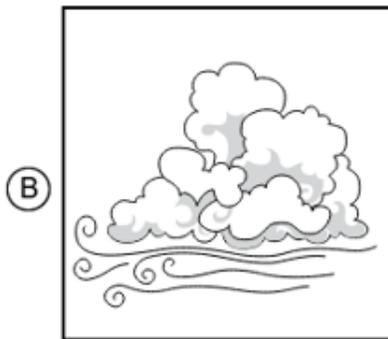
Look at the picture.



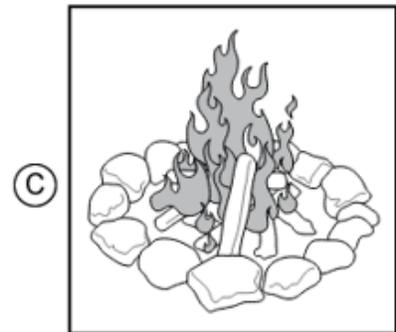
What caused the hillside to wear down and the rocks to fall on the road?



rain



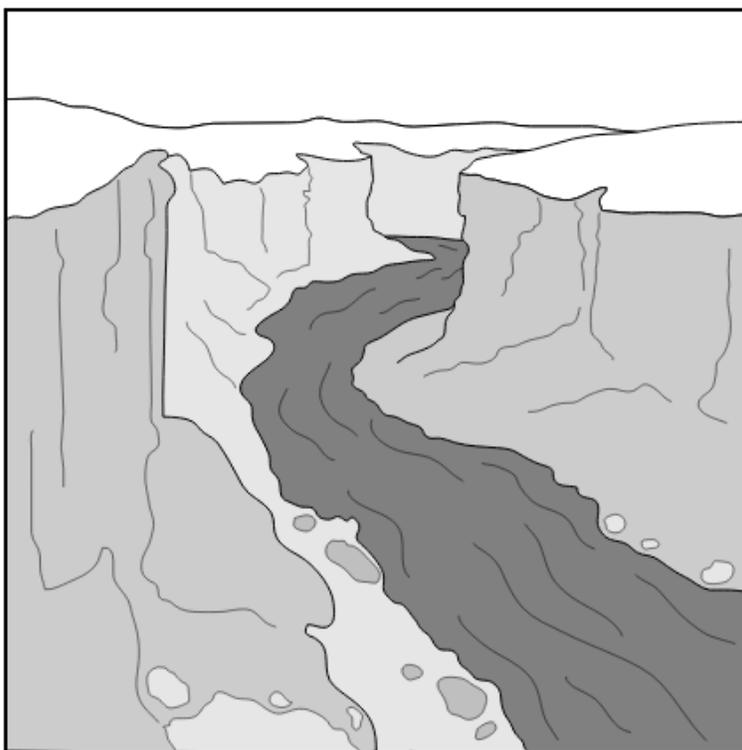
wind



fire

Sample Item Information for Teachers	
Grade: 4	Tier: 2
Key: C	Depth of Knowledge: 3 Link to DOK Wheel
Indiana Academic Standard: 4.2.2 Describe how wind, water and glacial ice shape and reshape earth's land surface by eroding rock and soil in some areas and depositing them in other areas in a process that occurs over a long period of time.	Content Connector: 4.2.2.a.1 Wind and water reshape the earth's surface by erosion and deposition.

Look at the picture of the canyon.

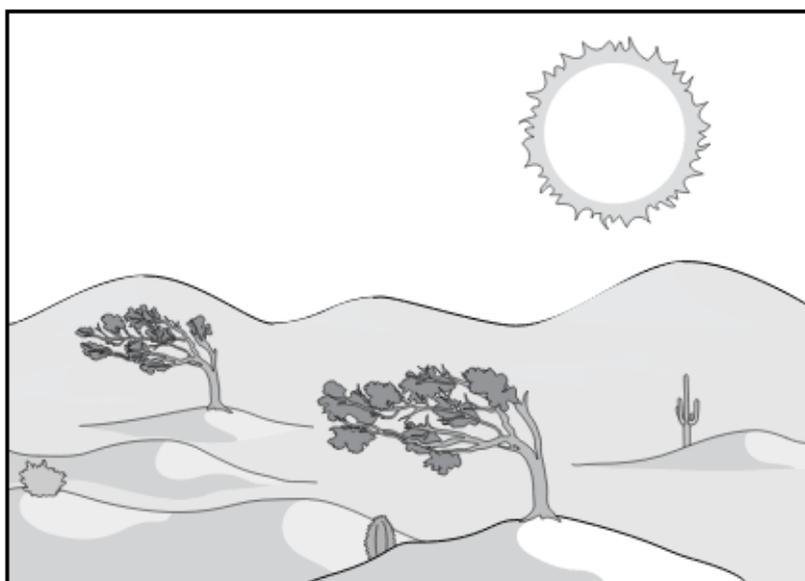


What caused the deep valley?

- (A) Fire eroded the rock over many years.
- (B) Wind eroded the rock over many years.
- (C) Water eroded the rock over many years.

Sample Item Information for Teachers	
Grade: 4	Tier: 3
Key: B	Depth of Knowledge: 3 Link to DOK Wheel
Indiana Academic Standard: 4.2.2 Describe how wind, water and glacial ice shape and reshape earth's land surface by eroding rock and soil in some areas and depositing them in other areas in a process that occurs over a long period of time.	Content Connector: 4.2.2.a.1 Wind and water reshape the earth's surface by erosion and deposition.

Look at the picture of the sand dunes in the desert.

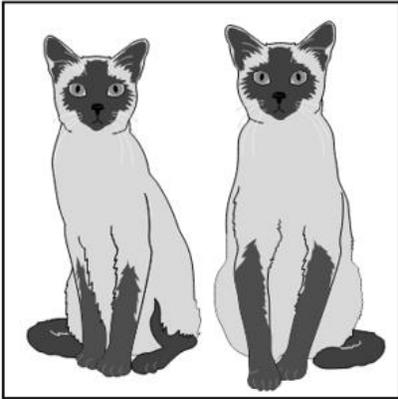


What caused the sand dunes to be deposited in the desert?

- (A) ice
- (B) wind
- (C) water

Sample Item Information for Teachers	
Grade: 4	Tier: 1
Key: C	Depth of Knowledge: 2 Link to DOK Wheel
Indiana Academic Standard: 4.3.1 Observe and describe how offspring are very much, but not exactly, like their parents or one another. Describe how these differences in physical characteristics among individuals in a population may be advantageous for survival and reproduction.	Content Connector: 4.3.1.a.1 Traits that are passed from parent to offspring may be advantageous for survival.

Look at the picture of the mother and father cat.

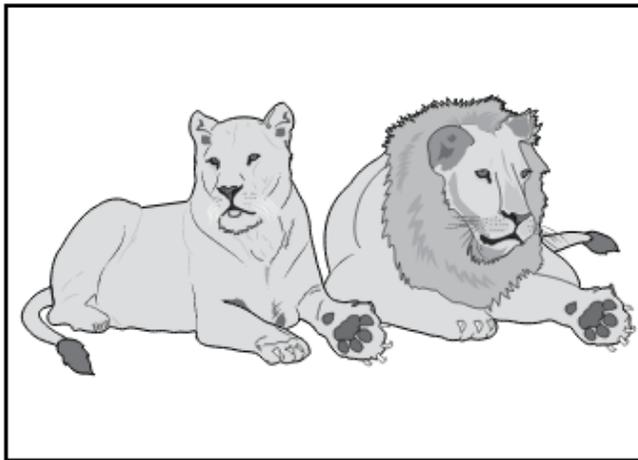


Which kitten would **MOST LIKELY** be their baby? Choose **ONE** in the row.

Which kitten?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Sample Item Information for Teachers	
Grade: 4	Tier: 2
Key: strong legs, sharp claws	Depth of Knowledge: 2 Link to DOK Wheel
Indiana Academic Standard: 4.3.1 Observe and describe how offspring are very much, but not exactly, like their parents or one another. Describe how these differences in physical characteristics among individuals in a population may be advantageous for survival and reproduction.	Content Connector: 4.3.1.a.1 Traits that are passed from parent to offspring may be advantageous for survival.

Look at the picture of the mother and father lion.

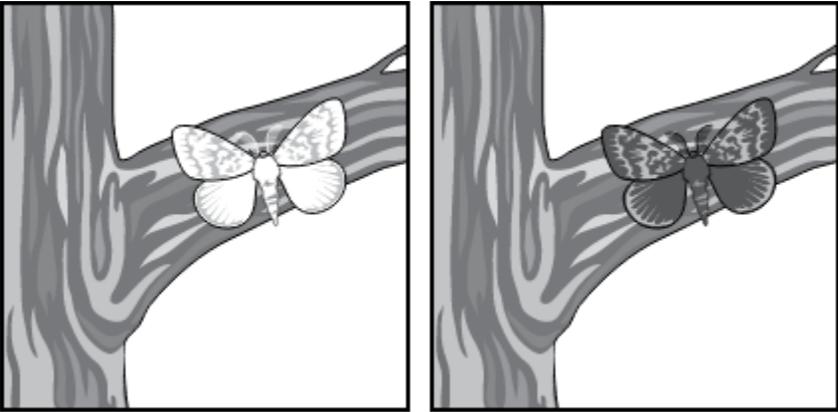


The lions have a cub. Which would the cub get from the parents that would allow it to catch its food? Choose **TWO**.

- long tail
- heavy fur
- strong legs
- sharp claws

Sample Item Information for Teachers	
Grade: 4	Tier: 3
Key: The brown	Depth of Knowledge: 2 Link to DOK Wheel
Indiana Academic Standard: 4.3.1 Observe and describe how offspring are very much, but not exactly, like their parents or one another. Describe how these differences in physical characteristics among individuals in a population may be advantageous for survival and reproduction.	Content Connector: 4.3.1.a.1 Traits that are passed from parent to offspring may be advantageous for survival.

Look at the pictures of the white and brown moths in the woods in summer.



A mother and a father moth live in the woods in the summer. They have a baby that is brown and a baby that is white. Birds like to eat moths.

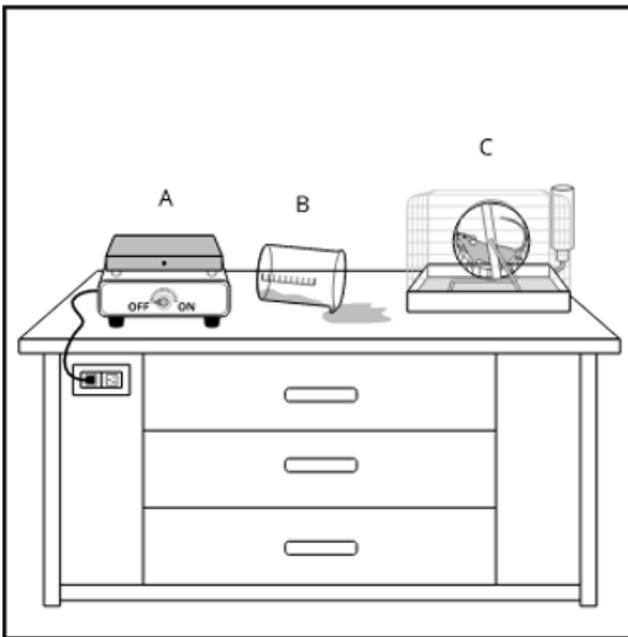
<input type="radio"/>	The white
<input type="radio"/>	The brown
<input type="radio"/>	Neither

moth can hide from the birds.

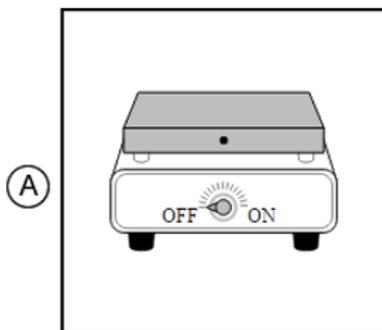
ISTAR Sample Items – Grade 6 Science

Sample Item Information for Teachers	
Grade: 6	Tier: 1
Key: B	Depth of Knowledge: 2 Link to DOK Wheel
Indiana Academic Standard: 6.DP.1 Identify a need or problem to be solved.	Content Connector: 6.DP.1.a.1 Problems can be identified.

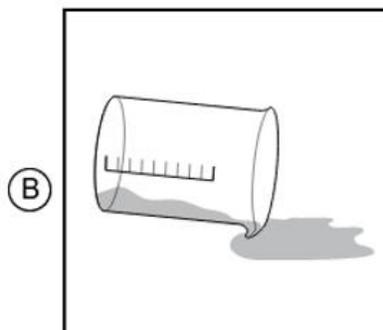
Look at the picture of a laboratory.



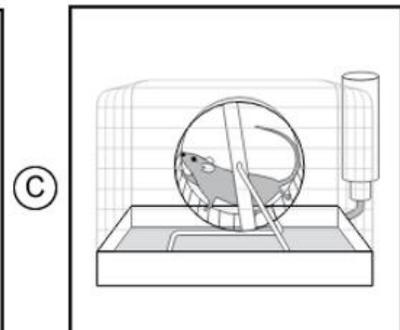
Which is a problem to be solved?



the hot plate is turned off



the beaker has spilled



the mouse is in a cage

Sample Item Information for Teachers	
Grade: 6	Tier: 2
Key: Is a Problem: Chemicals are spilling on the table. Is Not a Problem: The mouse is running in the wheel. Air is coming in through the open window.	Depth of Knowledge: 2 Link to DOK Wheel
Indiana Academic Standard: 6.DP.1 Identify a need or problem to be solved.	Content Connector: 6.DP.1.a.1 Problems can be identified.

Look at the picture of the laboratory and the beaker.



Choose if each of these is a problem or not. Choose **ONE** in each row.

	Is a Problem	Is Not a Problem
Chemicals are spilling on the table.	<input type="radio"/>	<input type="radio"/>
The mouse is running in the wheel.	<input type="radio"/>	<input type="radio"/>
Air is coming in through the open window.	<input type="radio"/>	<input type="radio"/>

Sample Item Information for Teachers	
Grade: 6	Tier: 3
Key: A	Depth of Knowledge: 2 Link to DOK Wheel
Indiana Academic Standard: 6.DP.1 Identify a need or problem to be solved.	Content Connector: 6.DP.1.a.1 Problems can be identified.

Look at the picture of the scientist in a laboratory.



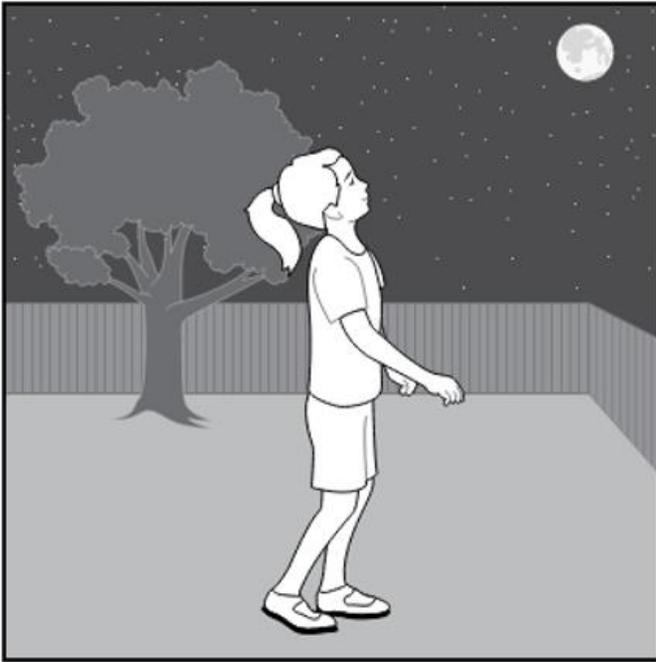
Which of the following is a problem the scientist should solve right away?

- (A) The beaker is in an unsafe place.
- (B) The beaker has not been cleaned.
- (C) The beaker does not have a cover.

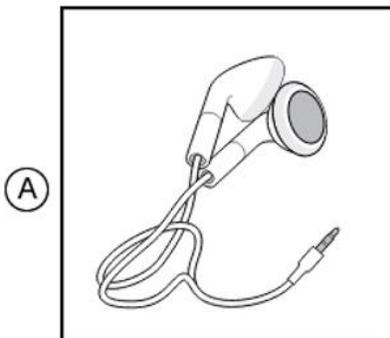
Sample Item Information for Teachers

Grade: 6	Tier: 1
Key: C	Depth of Knowledge: 1 Link to DOK Wheel
Indiana Academic Standard: 6.NS.3 Collect quantitative data with appropriate tools or technologies and use appropriate units to label numerical data.	Content Connector: 6.NS.3.a.1 Certain tools and some units are more appropriate for certain measurements.

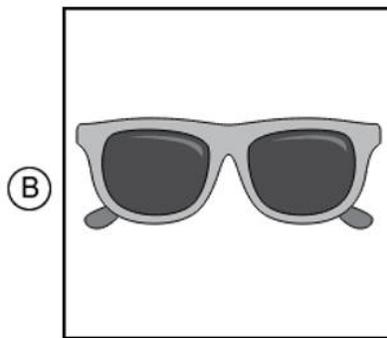
Look at the picture of the girl looking at the moon.



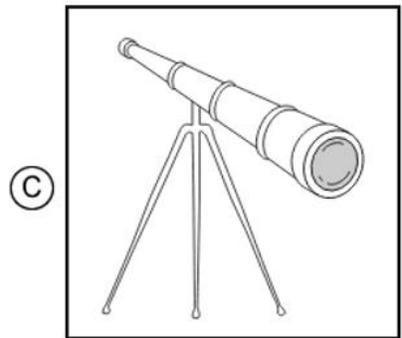
What would the girl use to help her see the stars better?



earphones



sunglasses



telescope

Sample Item Information for Teachers	
Grade: 6	Tier: 2
Key: scale	Depth of Knowledge: 2 Link to DOK Wheel
Indiana Academic Standard: 6.NS.3 Collect quantitative data with appropriate tools or technologies and use appropriate units to label numerical data.	Content Connector: 6.NS.3.a.1 Certain tools and some units are more appropriate for certain measurements.

Look at the picture of the boy holding a bag of apples.



The **BEST** tool to measure the weight of the bag of apples is a

- | | |
|-----------------------|-------------|
| <input type="radio"/> | ruler |
| <input type="radio"/> | scale |
| <input type="radio"/> | thermometer |

Sample Item Information for Teachers	
Grade: 6	Tier: 3
Key: scale, balance	Depth of Knowledge: 2 Link to DOK Wheel
Indiana Academic Standard: 6.NS.3 Collect quantitative data with appropriate tools or technologies and use appropriate units to label numerical data.	Content Connector: 6.NS.3.a.1 Certain tools and some units are more appropriate for certain measurements.

Kelly's dad planted cantaloupe in his garden. He wonders how much the largest cantaloupe weighs.

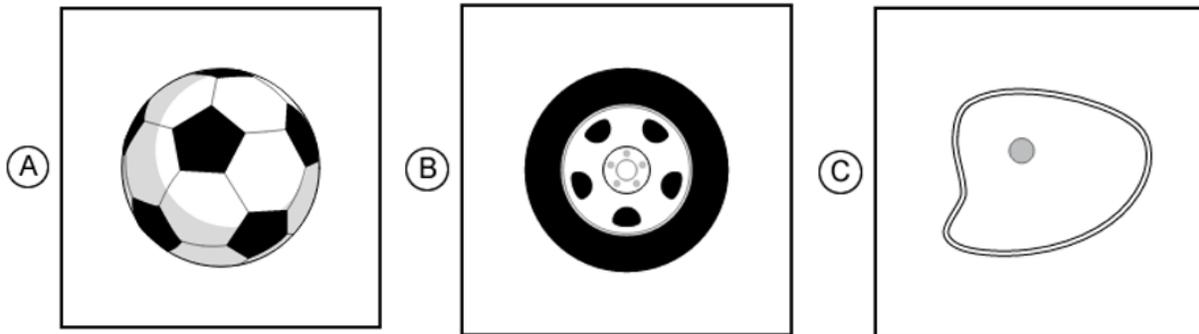
Choose **TWO** instruments Kelly's dad can use to weigh the cantaloupe.

- scale
- ruler
- thermometer
- balance
- measuring cup

ISTAR Sample Items – Grade 10 Science

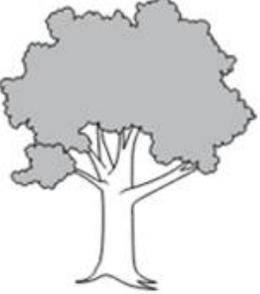
Sample Item Information for Teachers	
Grade: 10	Tier: 1
Key: C	Depth of Knowledge: 2 Link to DOK Wheel
Indiana Academic Standard: B.2.1 Describe features common to all cells that are essential for growth and survival. Explain their functions.	Content Connector: B.2.1.a.1 All living things are made of cells.

Which of the following is a cell?



Sample Item Information for Teachers	
Grade: 10	Tier: 2
Key: Consists of cells: cat, tree; Consists of other material: bottle	Depth of Knowledge: 2 Link to DOK Wheel
Indiana Academic Standard: B.2.1 Describe features common to all cells that are essential for growth and survival. Explain their functions.	Content Connector: B.2.1.a.1 All living things are made of cells.

All living things are made up of cells. In the table below, choose if the object is made up of cells or other material. Choose **ONE** in each row.

	Consists of cells	Consists of other material
	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/>	<input type="radio"/>

Sample Item Information for Teachers

Grade: 10	Tier: 3
Key: membrane	Depth of Knowledge: 1 Link to DOK Wheel
Indiana Academic Standard: B.2.1 Describe features common to all cells that are essential for growth and survival. Explain their functions.	Content Connector: B.2.1.a.1 All living things are made of cells.

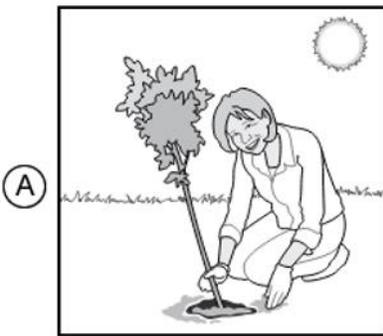
<input type="radio"/>	nucleus
<input type="radio"/>	cytoplasm
<input type="radio"/>	membrane

The

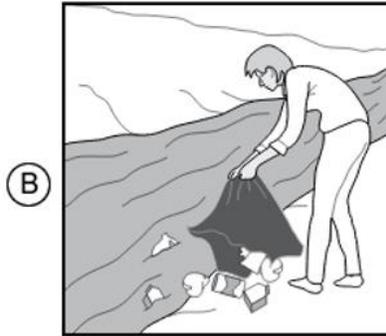
Sample Item Information for Teachers

Grade: 10	Tier: 1
Key: A	Depth of Knowledge: 2 Link to DOK Wheel
Indiana Academic Standard: B.4.2 Describe how human activities and natural phenomena can change the flow and of matter and energy in an ecosystem and how those changes impact other species.	Content Connector: B.4.2.a.1 Natural changes and human behavior impact the entire ecosystem.

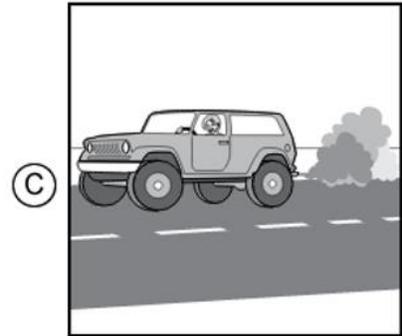
What will **MOST LIKELY** help the environment?



planting a tree



dumping trash



driving a car

Sample Item Information for Teachers	
Grade: 10	Tier: 2
Key: A	Depth of Knowledge: 1 Link to DOK Wheel
Indiana Academic Standard: B.4.2 Describe how human activities and natural phenomena can change the flow and of matter and energy in an ecosystem and how those changes impact other species.	Content Connector: B.4.2.a.1 Natural changes and human behavior impact the entire ecosystem.

Look at the picture of the woman planting the tree.



What kind of impact will planting a tree **MOST LIKELY** have on the environment?

- (A) a positive impact
- (B) a negative impact
- (C) no impact

Sample Item Information for Teachers	
Grade: 10	Tier: 3
Key: Plant lots of trees that will produce more oxygen; Building oyster farms that act as natural filters to clean the water.	Depth of Knowledge: 3 Link to DOK Wheel
Indiana Academic Standard: B.4.2 Describe how human activities and natural phenomena can change the flow and of matter and energy in an ecosystem and how those changes impact other species.	Content Connector: B.4.2.a.1 Natural changes and human behavior impact the entire ecosystem.

Choose which human actions will **MOST LIKELY** help the environment. Choose **TWO**.

- Letting a car run while no one is in it.
- Cutting down the rainforest to build cities.
- Plant lots of trees that will produce more oxygen.
- Use boat engines that leak chemicals into the water.
- Building oyster farms that act as natural filters to clean the water.