

Earth Science Test Questions

Below are sample questions from the Third International Mathematics and Science Study (TIMSS) achievement tests in Science administered to twenty-six countries. TIMSS is a research project sponsored by the International Association for the Evaluation of Educational Achievement (IEA). These questions may be used in the classroom, as a tool for evaluation, or to provide examples of test-question writing.



Grades 3 and 4

1. This table shows the temperature and precipitation (rain or snow) in four different towns in the same day.

	Town A	Town B	Town C	Town D
Lowest Temperature	13 Degrees C	-9 Degrees C	22 Degrees C	-12 Degrees C
Highest Temperature	25 Degrees C	-1 Degrees C	30 Degrees C	-4 Degrees C
Precipitation (rain or snow)	0 cm	5 cm	2.5 cm	0 cm

Where did it snow?

- A. Town A
- B. Town B
- C. Town C
- D. Town D

Answer: B

2. The moon produces no light, and yet shines at night. Why is this?

- A. The moon reflects the light from the sun.
- B. The moon rotates at a very high speed.
- C. The moon is covered with a thin layer of ice.
- D. The moon has many craters.

Answer: A

3. Sometimes mountains can still have snow on their tops when the snow on the lower parts of the mountains has melted. What makes this happen?

Answer: A correct response would mention that the air is colder higher up on a mountain top.

4. The sun is bigger than the moon, but they appear to be the same size when you look at them from the Earth. Why is this?

Answer: A correct response would include the idea that the sun is farther away than the moon.

5. Which one of these refers only to living things?

- A. clouds, fire, rivers
- B. fire, rivers, trees
- C. rivers, birds, trees
- D. birds, trees, worms
- E. trees, worms, clouds

Answer: D

6. Your temperature is taken when you are not sick. Which temperature is CLOSEST to what the thermometer would show?

- A. 29 Degrees C
- B. 37 Degrees C
- C. 100 Degrees C
- D. 212 Degrees C

Answer: B

7. A baby chick grows inside an egg for 21 days before it hatches. Where does the baby chick get its food before it hatches?

- A. It is fed by the mother hen.
- B. It doesn't need any food.
- C. It makes its own food.
- D. It uses food stored in the egg.
- E. It eats the egg shell.

Answer: D

8. John kept some seeds on moist cotton in a dish. Mike put the same kind of seeds in a dish beside John's dish, and covered them with water. After two days, John's seeds sprouted, but Mike's did not.

Which is the most likely reason?

- A. Mike's seeds needed more air.
- B. Mike's seeds needed more light.

- C. Mike did not put the dish in a warm enough place.
- D. Mike should have used a different kind of seed.

Answer: A

9. Which animal produces milk for its young?
- A. Chicken
 - B. Frog
 - C. Monkey
 - D. Snake

Answer: C

10. Birds are different from insects in that birds have
- A. wings
 - B. legs
 - C. eyes
 - D. eggs
 - E. feathers

Answer: E

11. Seeds develop from which part of a plant?
- A. Flower
 - B. Leaf
 - C. Root
 - D. Stem

Answer: A

12. What is the BEST reason for including fruits and leafy vegetables in a healthy diet?
- A. They have a high water content.
 - B. They are the best source of protein.
 - C. They are rich in materials and vitamins.
 - D. They are the best source of carbohydrates.

Answer: C

13. When an animal breathes faster and its heart beats faster, the animal is MOST likely
- A. cold
 - B. frightened
 - C. resting
 - D. sleeping

Answer: B

Grades 7 and 8

1. The source of energy for the Earth's water cycle is the

- A. wind
- B. sun's radiation
- C. Earth's radiation
- D. sun's gravity

Answer: B

2. Which BEST describes the surface of the Earth over billions of years?

- A. A flat surface is gradually pushed up into higher and higher mountains until the Earth is covered with mountains.
- B. High mountains gradually wear down until most of the Earth is at sea level.
- C. High mountains gradually wear down as new mountains are continuously being formed.
- D. High mountains and flat plains stay side by side for billions of years with little change.

Answer: C

3. Fossil fuels were formed from

- A. uranium
- B. sea water
- C. sand and gravel
- D. dead plants and animals

Answer: D

4. Air is made up of many gases. Which gas is found in the greatest amount?

- A. Nitrogen
- B. Oxygen
- C. Carbon dioxide
- D. Hydrogen

Answer: A

5. The sun is bigger than the moon, but they appear to be about the same size when you look at them from the Earth. Why is this?

Answer: Should mention that the sun is farther away than the moon.

6. Jane and Mario were discussing what it might be like to live on other planets.

Their science teacher gave them data about the Earth and an imaginary planet, Athena. The table shows these data.

	EARTH	ATHENA
Atmospheric Conditions	21% oxygen	10% oxygen
	0.03% carbon dioxide	80% carbon dioxide
	78% nitrogen	5% nitrogen
	ozone layer	no ozone layer
Distance from a star like the sun	148,640,000 km	103,600,000 km
Rotation on axis	1 day	200 days
Revolution around the sun	365 1/4 days	200 days

Write down one important reason why it would be difficult for humans to live on Athena if it existed.

Answer: The answer should include that it would be too hot on Athena because of the greenhouse effect caused by the high percentage of carbon dioxide.

7. Which statement explains why daylight and darkness occur on Earth?

- A. The Earth rotates on its axis.
- B. The sun rotates on its axis.
- C. The Earth's axis is tilted.
- D. The Earth revolves around the sun.

Answer: A

8. How long does it take light from the nearest star other than the sun to reach the Earth?

- A. Less than 1 second
- B. About 1 hour
- C. About 1 month
- D. About 4 years

Answer: D

9. Write down one reason why the ozone layer is important for all living things on Earth.

Answer: Should refer to protection against the UV rays of the sun.
