

Practice Worksheet — Grade 4 Science

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Contact and distance forces

1. A compass needle is sealed inside its case, yet wherever the compass is carried it swings around and settles pointing north. What does this show?
 - a) the needle is pulled towards whichever part of the room happens to be coldest
 - b) Earth behaves like an enormous magnet, and its magnetic force reaches the needle without touching it
 - c) north is very slightly downhill, so gravity draws the needle round that way
 - d) air moving about inside the sealed case pushes the needle until it comes to rest
2. A student tests a magnet by seeing how many paper clips it can hold through sheets of paper. With no paper it holds 12 clips, and each extra sheet placed between the magnet and the clips reduces the number it holds by 3. How many clips can it hold through 3 sheets?

Answer: _____

3. Which force pulls a dropped ball down towards the ground?
 - a) electricity
 - b) friction
 - c) magnetism
 - d) gravity

Design cycle

4. A student has an idea for a new bike rack for the schoolyard and wants a family member to build it exactly as she pictured it. What is the most useful thing for her to hand over?
 - a) a labelled drawing showing each part and its measurements
 - b) a list of reasons the school needs a bike rack
 - c) the name of the store that sells the wood and bolts
 - d) a photograph of a different bike rack she saw downtown
5. What is the first thing a designer should do when solving a problem?
 - a) start building straight away, so there is something to show quickly
 - b) test the finished product before deciding what it needs to do
 - c) understand clearly what the problem is and who it is for
 - d) choose the colours and the materials before anything else is decided
6. Your model bridge collapses when you test it. What should you do next?
 - a) give up and pick a new project
 - b) find out where it failed and improve the design
 - c) test it again without changing anything
 - d) hide the failure and report success

Earth systems support life

7. A school garden bed measures 4 square metres. In dry weather the plants need about 25 litres of water for every square metre each week. Rain supplied 30 litres to the bed this week. How many more litres must the students add?

Answer: _____ (L)

8. Which of these describe water moving between Earth's systems? Select all that apply.
- a) rain lands on a field and soaks down into the soil
 - b) water vapour high in the sky cools and gathers into clouds
 - c) fresh water is created out of nothing inside rocks each spring
 - d) water from a lake turns into vapour and rises into the air
9. Which of these does an animal need from Earth's systems to stay alive? Select all that apply.
- a) water to drink
 - b) a name
 - c) air to breathe
 - d) food to eat

Evidence in science

10. Two students measure the same table. One records it as 4 hands long, the other records it as 96 centimetres. Why is the second record better evidence?
- a) the second record uses a larger number, and larger numbers are more accurate
 - b) a centimetre is the same size for everyone, so anyone can check the result
 - c) the second student measured the table more times
 - d) hands are difficult to see clearly in a classroom
11. A student rolls the same toy car down the same ramp three times and records how far it travels: 62 cm, 58 cm and 66 cm. What is the difference between the longest and the shortest distance, in centimetres?

Answer: _____ (cm)

12. What is evidence in science?
- a) information gathered by observing or measuring
 - b) a guess about what might happen
 - c) an opinion someone feels strongly about
 - d) a story someone remembers

Reduce reuse recycle

13. Recycling programs ask people to rinse containers and put each material in the right bin.

Why does that matter?

- a) clean, correctly sorted material can be made into new products
- b) rinsing a container makes it safe to burn in a household fire
- c) sorting the bins lets the collection truck drive faster on its route
- d) food left in a container turns into compost inside the recycling bin

14. A class of 24 students each throws away one single-use plastic water bottle every school day. If every student switched to a refillable bottle, how many single-use bottles would the class keep out of the waste stream over 5 school days?

Answer: _____

15. Which of these belongs in a compost bin rather than the rubbish?

- a) a glass jar
- b) a plastic bottle
- c) an apple core
- d) an aluminium can

Structures of organisms

16. Many Alberta animals, such as the snowshoe hare, grow a much thicker coat of fur in autumn. How does that structure help the animal survive winter?

- a) the thick fur helps the animal digest frozen food more quickly
- b) the thick fur traps a layer of still air that slows heat escaping from the body
- c) the thick fur lets the animal take in more oxygen through its skin
- d) the thick fur adds weight so the animal is not blown over by winter wind

17. What is the main job of a plant's roots?

- a) making food for the plant using energy from sunlight
- b) attracting the insects that carry pollen between flowers
- c) taking in water and holding the plant in place
- d) producing the seeds that grow into new plants next year

18. A duck has webbed feet. How does this structure help it survive?

- a) it helps the duck crack open seeds
- b) it lets the duck climb up trees
- c) it pushes more water, helping the duck swim
- d) it keeps the duck warm through the winter

Sun moon and stars

19. A student marks the shadow of a fence post three times on a clear day: early in the morning, in the middle of the day, and late in the afternoon. The shadow is shortest in the middle of the day. What explains this?

- a) the Sun is highest in the sky in the middle of the day
- b) shadows always fade and shrink in bright light
- c) the Sun is closest to the Earth in the middle of the day
- d) the fence post gets shorter as the wood warms up

20. In Edmonton the longest day of the year in June has about 17 hours of daylight, and the shortest day in December has about 7 hours 30 minutes. How many more hours of daylight does Edmonton get on the longest day than on the shortest day?

Answer: _____ (hours)