Claim, evidence, reasoning: two survival tests

Names: Class: Date:

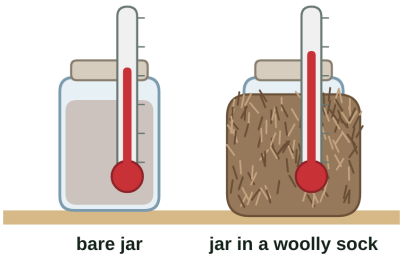
Work with a partner. Do each test and write what you measured. Then explain it: a claim that answers the question, your evidence, and your reasoning.

TEST 1 Does a woolly coat keep a warm jar warm?

You need: Two jars the same size, warm tap water, a woolly sock that fits over one jar, two thermometers and a timer.

Safety. Use warm tap water, not water from a kettle. An adult checks it is about 40 °C and pours it. Wipe up spills.

1. Fill both jars with warm water to the same level. Stand a thermometer in each.
2. Pull the sock over one jar. Leave the other jar bare.
3. Read both thermometers at the start, then every 5 minutes for 20 minutes.



Time (minutes)	Bare jar (°C)	Jar in the sock (°C)
0		
5		
10		
15		
20		

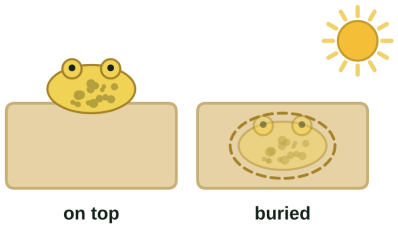
Question	Does a woolly coat keep a warm jar warm for longer?
Claim	
Evidence	
Reasoning	

TEST 2 Does sand help a sponge frog keep its water?

You need: Two sponges cut to the same size, two pieces of old stocking, a bowl of water, two small trays of plain play sand (not coloured sand), kitchen scales that show 1 g and a sunny spot.

Safety. Wash your hands after handling the sand. If you go outside, follow your school's sun-safety rules.

1. Soak both sponges, squeeze them out the same way, and wrap each in stocking so sand won't stick.
2. Put the same amount of dry sand in each tray. Lay one sponge on top of the sand in one tray, and bury the other in the other tray. Weigh each tray with its sand and sponge.
3. Leave both trays in the sun for 2 hours, then weigh each tray again. Weigh the whole tray, because some water soaks from the sponge into the sand.

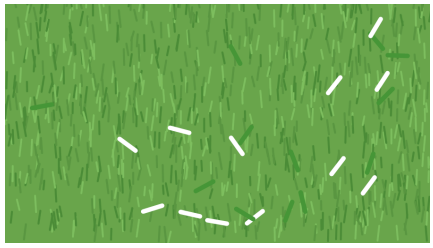


Tray	At the start (g)	After 2 hours (g)	Water lost (g)
Sponge on top of the sand			
Sponge buried in the sand			

Question	Does being buried help a sponge frog keep its water?
Claim	
Evidence	
Reasoning	

PART 3 Camouflage hunt

You need: 40 short pieces of wool, 20 green and 20 white, a patch of green grass and a timer.



> **Safety.** Follow your school's sun-safety rules. Check the grass for bees and anything sharp first. Count the pieces back in, so none are left behind.

Your teacher scatters the wool on the grass. You are the birds. In 30 seconds, pick up as many pieces as you can, one at a time. Then count each colour.

Green pieces found	
White pieces found	

Question	Which colour of wool is better hidden on green grass?
Claim	
Evidence	
Reasoning	

PART 4 Your own claim, evidence and reasoning

Choose a living thing from the lesson, or one you have seen near your home or school. How does one of its features or behaviours help it survive where it lives?

Living thing	
Claim	
Evidence	
Reasoning	

Answers (turn the page round). Test 1: the jar in the sock should stay warmer for longer. A claim: the woolly coat keeps the jar warm for longer. Your evidence is your temperatures. The reasoning: wool traps air, which slows the heat escaping. **Test 2:** the tray with the buried sponge should lose less water. A claim: being buried helps the sponge keep its water. Your evidence is your masses. The reasoning: under the sand, less water evaporates. **Part 3:** green pieces are harder to see on green grass, so you probably found fewer of them. That is camouflage: hiding by blending in with the background. **Part 4:** your claim answers your question; your evidence is something you saw, measured or read; your reasoning uses a science idea to link them.