Built to Survive: Parts With Jobs

Teacher		**Class**	Grade 4
Subject	Science	**Topic**	Plant and animal structures
Date		**Room**	
Lesson length	60 minutes	**Country**	United States

Students learn how internal and external parts help plants and animals live and grow. They make an X-ray poster to argue their ideas with evidence.

Curriculum links

- 4-LS1-1 — Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction [8]

Learning objectives

- Students will identify external and internal structures of plants and animals.
- Students will explain how structures support survival, growth, behavior, and reproduction.
- Students will construct an argument using evidence from observations and diagrams.

Success criteria

- I can name plant and animal structures inside and outside the body.
- I can explain how a structure helps survival, growth, behavior, or reproduction.
- I can make a claim and support it with two pieces of evidence.

What students already know

Ask students to turn and tell a partner one plant part and one animal part and what each does, then take 3 quick answers.

Key words

structure	a body part of a plant or animal [10]
function	the job a part does to help a living thing live [10]
xylem	tubes that carry water from roots up to leaves [3]
phloem	tubes that carry sugars made in leaves down to other parts [3]
evidence	what you see in observations or diagrams that proves an idea [8]

Materials

- Slides 1-4, 6-7, 9-11 and Video clip 1 (0:00–4:30)
- large paper
- markers
- plant and animal diagrams
- sentence-starter sheets for claim and evidence
- labeled xylem and phloem diagram
- copies of Worksheet Task H for each student

Before the lesson

- Test Slides 1-4, 6-7, 9-11 and Video clip 1 (0:00–4:30) for sound and picture
- Print plant and animal diagrams, one set per pair, and labeled xylem and phloem diagram
- Print sentence-starter sheets for claim and evidence, one per pair
- Print copies of Worksheet Task H, one per student
- Set out large paper and markers for posters

Created with LessonDino.com · AI lesson planner with checkable sources

Lesson outline

0–5 min **Starter** 5 min · Whole class

Hook interest and recall that living things have parts with jobs.

YOU DO

1. Show Slide 1 and say the X-ray hook to the class.
2. Show Slide 2 and point out that every living thing has parts with jobs.
3. Ask pairs to name one plant or animal part and what it does.
4. Link answers to the lesson goal about arguing how structures support survival and growth.

STUDENTS DO

1. Listen to the hook and look at the slides.
2. Tell a partner one part and its job.
3. Share one idea with the class.

Say: If we had X-ray eyes, what proof would we see that bodies are built to survive? Today we will construct an argument that structures support survival and growth. Tell your partner one part you know and what it does.

Ask: What is a structure? (A body part, and the parts of an animal's body are called its structure [10].) · Name one outside part and how it helps the living thing stay alive? (For example, shell protects, fur keeps warm, roots take in water [5][8].)

Check understanding: Thumbs up if you can name a part and its job; if many are unsure, model one more example before moving on.

Support: Model one example first and let students repeat the part and job together. **Stretch:** Ask students to predict what would happen to survival if that part was missing.

Use: Slides 1-2

5–17 min **Teaching** 12 min · Whole class

Teach key external and internal structures and their jobs.

YOU DO

1. Show Slides 3-4 and explain plant roots, stems, leaves and animal beaks, teeth, claws, fur, shells, legs, wings, and fins.
2. Show Slide 7 and explain heart, lungs, and stomach as hidden helpers inside.
3. Explain that both internal and external structures are suited to support survival, growth, behavior, and reproduction [3].
4. Use questioning to connect each part to getting what it needs, staying safe, or having offspring [8].

STUDENTS DO

1. Look at slides, listen, and repeat part names and jobs.
2. Answer what each part does for survival or growth.
3. Sort examples into outside parts and inside parts with the teacher.

Say: Plants and animals have outside parts and inside parts. Each part has a job that helps the living thing get what it needs, stay safe, move, and grow. Internal and external structures work together to support survival, growth, behavior, and reproduction.

Ask: How do roots, stems, and leaves each help a plant live? (Roots bring in water and nutrients with water [3], stems hold the plant up and move water upward, and most food used by plants is produced in the leaves from air and light [3].) · How do inside parts help an animal move and get energy? (Internal structures like skeletons, hearts, lungs, and stomachs support movement, protection, and getting energy [8].) · Why do different animals have different mouths? (Most animals have a mouth whose function is to take in food [3], and the type of mouth varies depending on what they evolved to eat [3].)

Check understanding: Mini whiteboards: write one outside part and one inside part with jobs; reshow Slide 7 cards if answers are mixed.

Support: Give a small picture bank of beaks, teeth, roots, heart, lungs, and stomach to point to while answering. **Stretch:** Ask students to compare two organisms and tell how different structures fit different diets or habitats.

Use: Slides 3-4, 7

17–30 min **Watch and model** 13 min · Whole class

Model how to use observations and diagrams as evidence for an argument.

YOU DO

1. Show Slide 6 and play Video clip 1 (0:00–4:30) so students spot one outside part and one inside part and its job.
2. Pause and record one outside example and one inside example on the board.
3. Model a written argument with claim and two pieces of evidence using xylem and phloem.
4. Show that all parts of the system for eating and digesting food must work together [3].

STUDENTS DO

1. Watch the video and call out one outside part and one inside part.
2. Copy the model claim and underline the two pieces of evidence.
3. Suggest a second example from the video for the class chart.

Say: Watch and spot one outside part and its job and one inside part and its job. Then I will show you how to turn what we saw into a strong argument. A good argument has a claim and proof from what we observed in diagrams or models.

Worked example: Claim: Tubes inside the plant stem help it survive and grow. Evidence 1: A system of tubes called the xylem carries water from the roots up to the leaves [3]. Evidence 2: A second system called the phloem carries sugars produced in the leaves down to all other parts of the plant [3]. So the tubes move what the plant needs to live and grow.

Ask: What evidence shows water moves up inside a plant? (Many nutrients like nitrogen are brought in with water through the roots [3], and the xylem carries water from the roots up to the leaves [3].) · What evidence shows food moves to other parts? (Most food is produced in the leaves from air and light [3], and the phloem carries sugars produced in the leaves down to all other parts [3].)

Check understanding: Hinge question with hands: which carries water up, xylem or phloem? Reteach with arrows up and down if split.

Support: Provide a half-finished diagram with arrows for water going up and sugar going down to follow during the video [3]. **Stretch:** Ask what would happen to growth if the xylem or phloem was blocked, and ask for evidence.

Use: Slide 6, Video clip 1 (0:00–4:30)

30–50 min **Main activity** 20 min · Pairs

Pairs construct an X-ray poster arguing how three parts help survival.

YOU DO

1. Show Slide 9 and explain the pair task to pick one plant and one animal and argue how three parts help them survive.
2. Give out large paper, markers, plant and animal diagrams, and sentence starters.
3. Remind pairs to draw an outside view and an X-ray inside view and label each part with its job for survival, growth, behavior, or reproduction [3].
4. Circulate, prompt for two pieces of evidence, and push ready pairs to add a counter-idea.

STUDENTS DO

1. Pick one plant and one animal and draw outside and X-ray inside views.
2. Label at least two external and one internal structure with jobs, including roots, leaves, beaks, claws, fur, shells and heart, lungs, stomach, brain [8].
3. Write a claim with at least two pieces of evidence and present the poster to another pair.

Say: In pairs, choose a plant and an animal you saw today. Draw what they look like outside and what helpers are hidden inside. Label three parts and write an argument that uses proof from diagrams and what we observed to show how they help the living thing get what it needs and stay safe.

Ask: Which three parts did you choose and how does each help survival or growth? (Listen for clear matches, such as roots take in water, xylem moves it up, heart moves energy around, stomach breaks down food [3][8].) · What proof from diagrams or observations supports your claim? (Listen for use of observations, diagrams, and short texts as evidence to support an argument [8].)

Check understanding: Circulate with a checklist for three labeled parts and two pieces of evidence; have unfinished pairs copy the sentence starters to complete one claim before sharing.

Support: Provide sentence starters for claim and evidence and a labeled diagram showing xylem carrying water to leaves and phloem carrying sugar to other parts [3]. **Stretch:** Have students add a counter-idea, such as what would happen without one structure, and rebut it with evidence.

Use: Slide 9

50–60 min **Plenary** 10 min · Whole class

Return to the big idea and check matching of structures to jobs.

YOU DO

1. Show Slide 10 and restate that every part has a job that helps living things survive and grow.
2. Show Slide 11 and have pairs discuss what would happen with no roots and no mouth.
3. Hand out Worksheet Task H and have students match each structure to its job.
4. Collect Task H and restate success criteria with two poster examples.

STUDENTS DO

1. Discuss Slide 11 with a partner and share because-statements.
2. Complete Worksheet Task H on their own by matching structures to jobs.
3. Self-check against success criteria with thumbs up.

Say: Every part has a job that helps living things survive and grow. Think with your partner: what if a plant had no roots and an animal had no mouth? Show what you know by matching each structure to its job.

Ask: What if a plant had no roots and an animal had no mouth? (The plant could not bring in water and nutrients through roots [3] and the animal could not take in food through its mouth [3], so they could not survive to grow or reproduce.) · How do inside and outside parts work together? (External structures like roots, leaves, beaks, and shells and internal structures like heart, lungs, and stomach each do jobs, and all parts must work together [3][8].)

Check understanding: Scan Task H matches and exit answers; reteach any mixed pairs tomorrow with diagrams.

Support: Let students speak in pairs first using a frame that names the structure and job, then write the match. **Stretch:** Ask students to add a second effect on behavior or reproduction if the structure was missing.

Use: Slides 10-11, Worksheet Task H

Common mistakes

Mistake	How to spot it	How to fix it
Thinking plants have no inside parts, only animals do.	Poster shows only roots and leaves with no tubes inside the stem.	Show that a system of tubes called the xylem carries water up and the phloem carries sugars down inside the plant [3].
Thinking one part works alone.	Claim mentions only teeth or only stomach for getting energy.	Remind that all parts of the system for eating and digesting food must work together [3].
Mixing up which tube moves water up and which moves sugar down.	Arrows point sugar up and water down.	Point to the labeled diagram: xylem carries water from roots up to leaves and phloem carries sugars from leaves down [3].

Support

- Provide sentence starters for claim and evidence and a labeled diagram showing xylem carrying water to leaves and phloem carrying sugar to other parts [3].

Stretch

- Have students add a counter-idea, such as what would happen without one structure, and rebut it with evidence.

For the LSE or teaching assistant

Sit near pairs needing reading support during the poster task; read sentence starters aloud and point to the labeled xylem and phloem diagram while they label.

Check for understanding

Question	Answer
What job do roots do?	Soak up water and nutrients from soil through roots [3].
What do plant tubes called xylem carry?	Water from roots up to leaves [3].
Give one internal animal structure and how it helps survival.	Heart pumps blood to move energy, lungs pull in air, or stomach breaks down food to help growth [8].

Sources

1. Social Science · cps.edu · https://www.cps.edu/sites/skyline/curriculum/social-science/
2. Acellus® Grade 4 Science · science.edu · https://www.science.edu/Acellus/curriculum/science/lesson-lists/Grade%204%20Science.pdf
3. Life Science - STRUCTURE AND FUNCTION: Internal and External · digitalcommons.imsa.edu · https://digitalcommons.imsa.edu/model_ngss_lessons_4_5/4/
4. A glossary of plant cell structures: Current insights and ... · pmc.ncbi.nlm.nih.gov · https://pmc.ncbi.nlm.nih.gov/articles/PMC8846186/
5. Functions and Structures of Plants and Animals - Providence ... · providencechildrensmuseum.org · https://providencechildrensmuseum.org/functions-structures-plants-animals/
6. Plant and animal cells - Cell structure - AQA - GCSE Combined ... · bbc.co.uk · https://www.bbc.co.uk/bitesize/guides/zpqpqhv/revision/12
7. What are plant and animal cells? - BBC Bitesize · bbc.co.uk · https://www.bbc.co.uk/bitesize/articles/zkm7wnb
8. Unit Plan 19 (Grade 4 Science): Plant & Animal Structures · teachmaverick.com · https://www.teachmaverick.com/up-4-science-plant-animal-structures/
9. Structure of plants and animals - Thunderbolt Kids · thunderboltkids.co.za · http://www.thunderboltkids.co.za/Grade4/01-life-and-living/chapter2.html
10. Animal structure KS1 | Y1 Science | Lesson Resources · thenational.academy · https://www.thenational.academy/teachers/programmes/science-primary-ks1/units/naming-and-grouping-animals/lessons/animal-structure