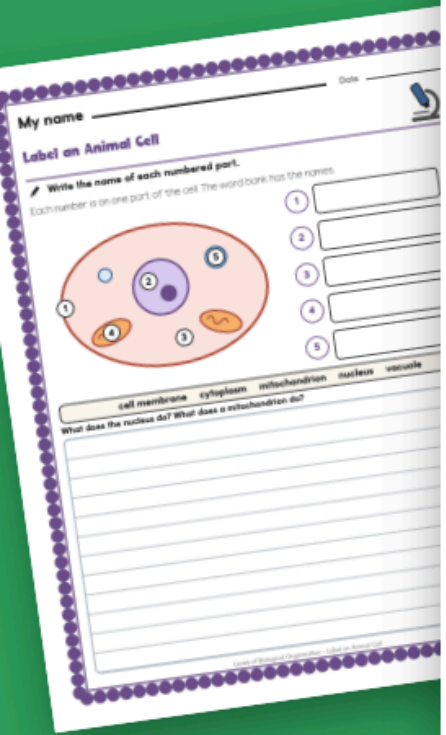
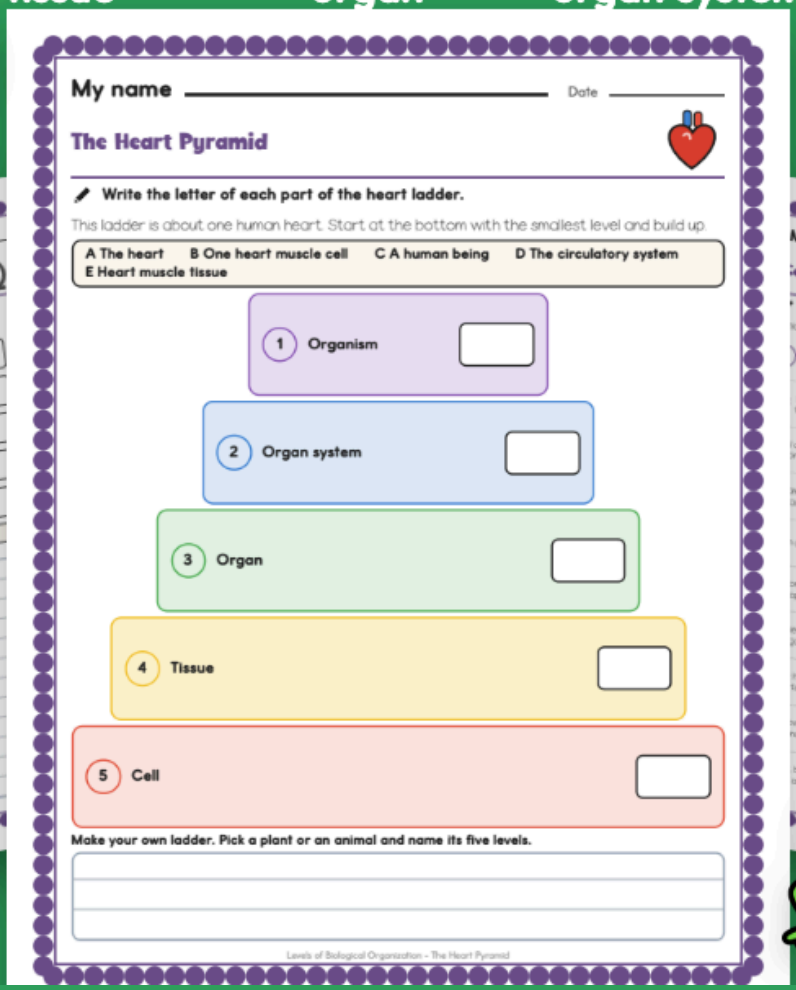
LEVELS OF BIOLOGICAL ORGANIZATION

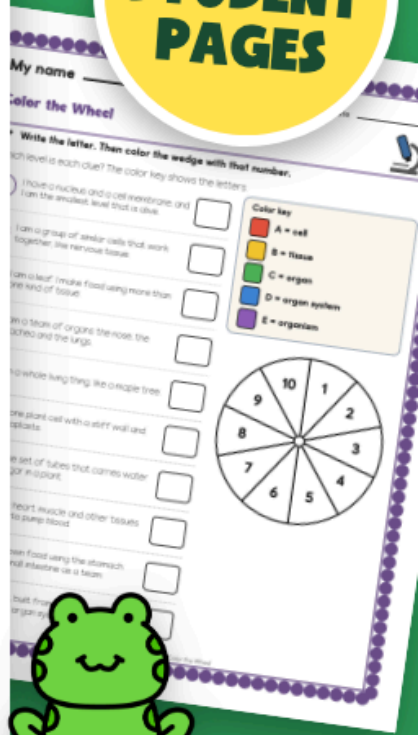
cell → tissue → organ → organ system → organism

GRADES 6-8

27 STUDENT PAGES







Bright Path Sped

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- Open it in a PDF reader (Adobe Acrobat Reader, Preview, or your browser), click into a line or a box, type, and Save As.
- The name line, every answer box, every ruled work box and every check box on the student pages are type-in fields, and so are the tracker, class grid, team note and family page. You can also print any page and write by hand.
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Print at 100 percent

Turn off fit to page and shrink to fit so the ruled lines stay 0.34 inch apart. Every student page is black and white inside a colored border, so it still reads when copied in black and white.

Student work

A filled-in tracker, class grid or team note carries a real student's name. Keep it in the data folder, and use a first name only on any page that leaves your hands.

Need help?

If a field will not behave or a page will not print the way you expect, use Ask a Question on the product page. Every question is read, and a fix ships as a free update.

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PREVIEW

How To Read a Page

The parts of a student page, then the page types in the order they come.

The parts of a page

- **The answer box.** A bordered box for a letter or a short word. Click it to type, or print and write in it.
- **The ruled work box.** Lines 0.34 inch apart. A short answer gets 4 lines; the main idea and example boxes get 3 and the paragraph page gets 18. It types and prints.
- **The check box.** True or false: click or mark one.
- **The reading.** A short passage with its number at the top, then a main idea box, an example box and two checks.
- **The cut line.** Six pieces in a 3 by 2 grid, each 2.4 by 1.25 inches, edge to edge: one cut across and two cuts down.

Page type	What it looks like	What the student does
Before You Read, Words to Know	2 pages, 12 items	True or false on the big picture; match eight words to their meanings.
7 Readings	14 checks	Read, write the main idea and an example, answer two checks with a letter.
Which Level, two pyramids	3 pages, 20 items	Name the level of ten examples; fill two stepped pyramids.
Two cells, tissues, systems, ladder	5 pages, 34 items	Label two cells; match tissues and organ systems; complete four ladders.
Color the Wheel	1 page, 10 items	Name the level of ten clues and color the wedge with that number.
Think It Through, claim-evidence-reasoning	6 questions, 2 organizer pages	4 lines per question; a plan and an 18-line paragraph.
Quiz, Cut and Paste	12 items, 18 pieces	A quiz in two parts and three cut-and-paste mats (in order, which level, which cell).

Untimed, unscored on the page

No student page has a timer or a score on it. The keys and the tracker are for you. The answer keys are on pages 32 to 36.

A short account, not a full textbook

Each reading is a summary of one idea in plain words. It is not a complete biology course, and it is not tied to any particular standard. Add your own textbook, microscope work or models for more depth.

Printing and the type-in fields

Every page prints clean in black and white. Every box and line is a type-in field in any PDF reader: click, type, save. This is a fillable PDF, not a slideshow or a word-processor file. Color the wheel by hand on paper.

Open answers

Short answers and the paragraph are open. The keys give a sample. Accept any answer that is true to the readings.

PREVIEW

Preview - Bright Path Sped

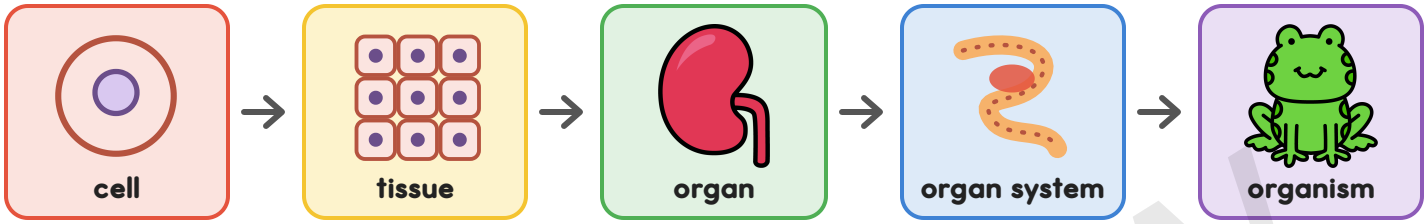
My name _____ Date _____



Before You Read

Read the big idea. Then check true or false.

Every living thing is built in levels. Here is the ladder, from smallest to largest.



The ladder	Cells make tissues. Tissues make organs. Organs make organ systems. Organ systems make an organism.
The cell	The cell is the basic unit of life. Some organisms are only one cell. Others have trillions.
Teamwork	Each level does a job the smaller parts cannot do alone. A heart can pump blood. One muscle cell cannot.

Try it. Is each sentence true or false?

1. A cell is the basic unit of life. ☐ true ☐ false
2. A tissue is a group of different organs. ☐ true ☐ false
3. Organs that work together make an organ system. ☐ true ☐ false
4. Every organism has organs. ☐ true ☐ false

In your own words: what is a level of organization?

PREVIEW

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My name _____ Date _____

The Cell: Basic Unit of Life



Read the passage. Then write the main idea.

Reading 2 of 7

The cell is the basic unit of life. All living things are made of one or more cells, and new cells come only from cells that already exist. Most cells are too small to see without a microscope. Every cell is surrounded by a cell membrane, a thin barrier that controls what enters and leaves. Inside is the cytoplasm, a jelly-like fluid where many of the cell's jobs happen. The nucleus holds the cell's DNA, the instructions that direct the cell. Mitochondria release energy from food so the cell can work. Plant cells have extra parts. A stiff cell wall outside the membrane gives support, chloroplasts capture light to make food by photosynthesis, and a large central vacuole stores water. Animal cells do not have cell walls or chloroplasts. Some organisms, such as bacteria, are a single cell that does every life job alone. Others, such as dogs, maple trees and people, are made of many cells. Their cells are specialized, so a nerve cell and a muscle cell look different because they do different jobs.

Main idea: What is this passage mostly about?

Example: Which fact or example from the passage shows it?

Check what you read. Write the letter in the box.

1. What does the nucleus hold? ☐
   - **A** The cell's food
   - **B** The cell's DNA
   - **C** Water for the cell

2. Which part do plant cells have that animal cells do not? ☐
   - **A** A cell membrane
   - **B** A nucleus
   - **C** Chloroplasts

PREVIEW

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My name _____ Date _____

Organ Systems: Organs Working Together

Read the passage. Then write the main idea.

Reading 5 of 7

An organ system is a group of organs that work together to do a major job for the body. The digestive system breaks down food and takes in nutrients. Its organs include the mouth, esophagus, stomach, small intestine and large intestine. The respiratory system brings oxygen in and removes carbon dioxide. Its organs include the nose, trachea and lungs. The circulatory system moves blood to every part of the body. Its organs are the heart and the blood vessels. The nervous system, made of the brain, spinal cord and nerves, collects information and sends signals. The skeletal system supports the body, and the muscular system moves it. Plants have organ systems too. The root system takes in water and minerals. The shoot system, made of stems, leaves and flowers, makes food and carries materials. No organ system works alone. The digestive system breaks food into nutrients, but the circulatory system carries those nutrients to every cell, and the respiratory system supplies the oxygen the cells need to use them.

Main idea: What is this passage mostly about?

Example: Which fact or example from the passage shows it?

Check what you read. Write the letter in the box.

1. Which organ system moves blood to every part of the body? ☐
   - **A** Respiratory system
   - **B** Circulatory system
   - **C** Skeletal system

2. Which part of a plant belongs to the shoot system? ☐
   - **A** Roots that take in water
   - **B** Leaves that make food
   - **C** Soil that holds the plant

PREVIEW

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My name _____ Date _____

From Cell to Biosphere



Read the passage. Then write the main idea.

Reading 7 of 7

The ladder does not stop at the organism. Scientists study bigger levels that show how living things connect. A population is a group of the same kind of organism living in the same place, such as all the frogs in one pond. A community is all the populations living in the same place, including the frogs, the fish, the insects and the plants in that pond. An ecosystem includes the community and the nonliving parts around it, such as water, sunlight, soil and air. The biosphere is all the places on Earth where life exists. Each level adds new things to study. A doctor might study an organ, a zoologist might study one organism, and an ecologist might study a whole ecosystem. Put together, one long ladder runs from cell to biosphere: cell, tissue, organ, organ system, organism, population, community, ecosystem and biosphere. A change at one level can reach the others. If the pond dries up, the frogs lose their home, and every cell in every frog is affected.

Main idea: What is this passage mostly about?

Example: Which fact or example from the passage shows it?

Check what you read. Write the letter in the box.

1. What is a population? ☐
   - **A** All the living and nonliving things in a place
   - **B** A group of the same kind of organism in one place
   - **C** One whole living thing

2. Which level includes nonliving parts such as water and sunlight? ☐
   - **A** Community
   - **B** Ecosystem
   - **C** Population

PREVIEW

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My name _____ Date _____

Which Level?



Write the letter of the level.

A = cell B = tissue C = organ D = organ system E = organism

Which level of organization is each one? Write A, B, C, D or E in the box.

1. A single muscle cell
2. Heart muscle tissue
3. The stomach
4. The digestive system
5. A sunflower
6. The skin
7. Nervous tissue
8. A leaf cell
9. The respiratory system
10. A frog

Pick one item. How do you know which level it is?

PREVIEW

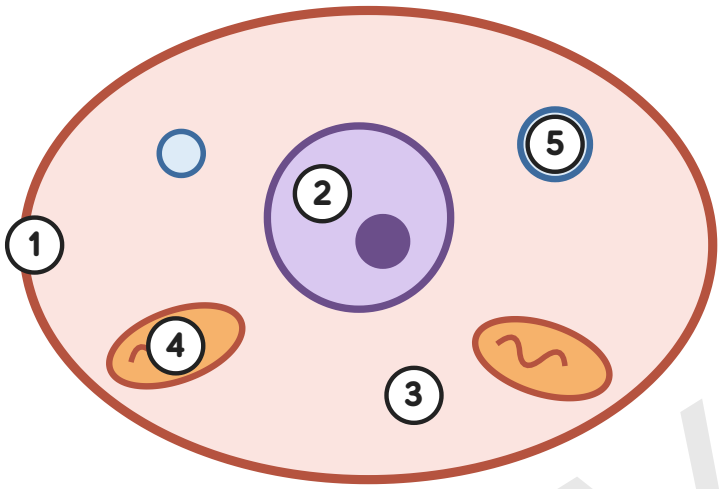
Preview - Bright Ezee Shop

My name _____ Date _____

Label an Animal Cell

Write the name of each numbered part.

Each number is on one part of the cell. The word bank has the names.



1 _____

2 _____

3 _____

4 _____

5 _____

cell membrane **cytoplasm** **mitochondrion** **nucleus** **vacuole**

What does the nucleus do? What does a mitochondrion do?

PREVIEW

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My name _____ Date _____

Name the Tissue

Write the letter of the tissue.

A epithelial tissue **B connective tissue** **C muscle tissue** **D nervous tissue**
E dermal tissue (plant) **F vascular tissue (plant)** **G ground tissue (plant)**

Read each job. Write the letter of the tissue that does it.

1. Covers the skin and lines the stomach. ☐
2. Its cells shorten to make a body part move. ☐
3. Sends electrical signals through the brain and nerves. ☐
4. Holds body parts together. Bone and blood are examples. ☐
5. Forms the protective outer layer of a leaf. ☐
6. Carries water and sugar through a plant in tubes. ☐
7. In a leaf, much of it makes food by photosynthesis. ☐
8. Lines the inside of the mouth. ☐

Why is a tissue made of many of the same kind of cell?

PREVIEW

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My name _____ Date _____

Think It Through A

Answer each question in full sentences.

Use facts from the readings to answer.

1. What is the difference between a tissue and an organ?

2. Why is the skin an organ and not just a tissue?

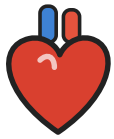
3. List the levels from smallest to largest, from cell to organism.

PREVIEW

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My name _____ Date _____

Claim, Evidence, Reasoning



Plan your answer. Write a claim, evidence and reasoning.

Question: Is the heart a tissue or an organ?
Use facts from the readings on pages 8 and 9.

I think the heart is a(n) ____ because ____. For example, ____. This shows that ____ because ____.

Claim: Tissue or organ? Write your answer.

Evidence: Give two facts from the readings.

Reasoning: Explain how your facts prove your claim.

PREVIEW

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My name _____ Date _____

Quiz, Part A

Read each one. Write the letter of the best answer.

1. What is the basic unit of life?
   - **A** A tissue
   - **B** A cell
   - **C** An organ

2. A group of similar cells that work together is a...
   - **A** tissue
   - **B** organ
   - **C** organism

3. Which cell part holds the DNA?
   - **A** The cell wall
   - **B** A mitochondrion
   - **C** The nucleus

4. Which plant cell part captures light to make food?
   - **A** Chloroplast
   - **B** Nucleus
   - **C** Cell membrane

5. The heart is made of several tissues that work together. The heart is a(n)...
   - **A** cell
   - **B** organ
   - **C** organ system

6. Which part gives a plant cell its stiff outer support?
   - **A** Cell wall
   - **B** Nucleus
   - **C** Cytoplasm

PREVIEW

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My name _____ Date _____

Cut and Paste 1

Cut out the six pieces. Paste them in order, smallest to largest.

One frog, from one cell to a whole pond. Reading 7 (page 12) can help.

1 Cell	2 Tissue	3 Organ

4 Organ system	5 Organism	6 Population

Cut on the dashed lines: six pieces, one cut across and two cuts down.

 All the frogs living in one pond	 One muscle cell from a frog's leg	 The muscular system of a frog
 Muscle tissue in a frog's leg	 One whole frog	 A leg muscle of the frog

Why does each box hold more than the one before it?

PREVIEW

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My name _____ Date _____

Cut and Paste 3

Cut out the six pieces. Paste each one in the right box.

Some cell parts are only in plant cells. Some are in both.

Plant cells only	Plant and animal cells

PREVIEW

Cut on the dashed lines: six pieces, one cut across and two cuts down.



Has a stiff cell wall.



Has a nucleus that holds DNA.



Has chloroplasts for photosynthesis.



Has mitochondria that release energy.



Has a large central vacuole.



Is surrounded by a cell membrane.

Which part helps a plant cell make food?

Answer Key: Pyramids, Cells, Wheel

Pages 15 to 18 and 28.

Fill the Pyramid page 15

Step	Clue starts	Name
1	A whole living thing.	organism
2	Organs that work together.	organ system
3	Tissues that work together ...	organ
4	Similar cells that work ...	tissue
5	The basic unit of ...	cell

The Heart Pyramid page 16

Step	Level	Piece
1	organism	C: A human being
2	organ system	D: The circulatory system
3	organ	A: The heart
4	tissue	E: Heart muscle tissue
5	cell	B: One heart muscle cell

Label an Animal Cell page 17

#	Part
1	cell membrane
2	nucleus
3	cytoplasm
4	mitochondrion
5	vacuole

Label a Plant Cell page 18

#	Part
1	cell wall
2	nucleus
3	chloroplast
4	central vacuole
5	mitochondrion

Color the Wheel page 28

#	Clue starts	Letter and color
1	I have a nucleus and a ...	A: cell
2	I am a group of similar ...	B: tissue
3	I am a leaf. I make ...	C: organ
4	I am a team of organs: ...	D: organ system
5	I am a whole living thing, ...	E: organism
6	I am one plant cell with ...	A: cell
7	I am the set of tubes ...	B: tissue
8	I am the heart: muscle and ...	C: organ
9	I break down food using the ...	D: organ system
10	I am a frog, built from ...	E: organism



The finished wheel

Wedges 1 to 10 take these colors: 1, red, 2, yellow, 3, green, 4, blue, 5, purple, 6, red, 7, yellow, 8, green, 9, blue, 10, purple. The colors repeat in a pattern because each level appears twice.

PREVIEW

Answer Key: Written Answers

Think It Through A and B (pages 22, 23), the paragraph pages and samples for the main idea and example boxes. These are samples, not the only right answers. Accept any wording that matches the readings.

Think It Through

#	Starts with	A good answer includes
1	What is the difference between a …	A tissue is a group of similar cells that do one job. An organ is made of two or more kinds of tissue working together to do a specific job.
2	Why is the skin an organ …	The skin is made of more than one kind of tissue, such as epithelial and connective tissue, that work together to protect the body.
3	List the levels from smallest to …	Cell, tissue, organ, organ system, organism.
4	Describe two ways a plant cell …	A plant cell has a cell wall, chloroplasts and a large central vacuole. An animal cell has none of these. Any two are correct.
5	Why does a unicellular organism not …	It is only one cell. Tissues and organs are made of many cells working together, so the cell does every life job by itself.
6	Explain why the circulatory system needs …	The lungs of the respiratory system take in oxygen, and the circulatory system carries the oxygen in the blood to every cell.

Sample: Claim, Evidence, Reasoning (page 24)

- **Claim:** The heart is an organ, not just a tissue.
- **Evidence:** The heart is made of more than one kind of tissue. Muscle tissue squeezes to pump blood, connective tissue holds it together and forms its valves, and epithelial tissue lines the inside.
- **Reasoning:** A tissue is a group of similar cells that do one job. An organ is made of two or more kinds of tissue that work together on a specific job. Because the heart uses several tissues together to pump blood, it fits the meaning of an organ.

Main idea and example boxes pages 6 to 12

Reading	A good main idea says	A good example says
The Ladder	Living things are built in levels. Cells make tissues, tissues make organs, organs make organ systems and organ systems make an organism.	A single muscle cell can only squeeze, but a heart made of several tissues can pump blood.
The Cell	The cell is the basic unit of life. Every cell has a membrane, cytoplasm and a nucleus, and plant cells also have a cell wall and chloroplasts.	A muscle cell and a nerve cell look different because they do different jobs.
Tissues	A tissue is a group of similar cells that work together to do one job. Animals and plants each have several kinds of tissue.	Muscle tissue shortens to move the body, and vascular tissue carries water and sugar through a plant.
Organs	An organ is made of different kinds of tissue that work together to do a specific job.	The heart uses muscle, connective, epithelial and other tissues to pump blood, and a leaf is an organ that makes food.
Organ Systems	An organ system is a group of organs that work together to do a major job, and the systems of a body depend on each other.	The digestive system breaks food down, and the circulatory system carries the nutrients to every cell.
Organisms	An organism is one whole living thing. It may be a single cell or many cells working together.	A bacterium is one cell and one organism, but a frog has cells, tissues, organs and organ systems.
Beyond	Above the organism are populations, communities, ecosystems and the biosphere. Together they make one ladder from cell to biosphere.	All the frogs in one pond are a population, and the pond with its water and sunlight is an ecosystem.

PREVIEW

Class Progress Grid

Every student on one grid: items right by page type.

Class or group _____ Month _____

Student	Basics, words (of 12)	Readings (of 14)	Levels, pyramids, ladder (of 28)	Cells, tissues, systems (of 26)	Wheel, quiz (of 22)	Sorts (of 18)

PREVIEW

How to fill this in

For each column, add up how many items that student has right with no prompt (the tracker rows). One glance across a row shows which skill is easiest and which is next.

Grouping for small-group time

Students low in Readings need the passages read aloud and the main idea boxes done together (pages 6 to 12). Students low in Levels need Which Level worked with a model first (page 14). Students near full marks can move to the claim, evidence and reasoning pages (24, 25).

Priya's Tracker (Invented Student)

Priya N. is invented; nothing on this page describes a real student. The blank tracker is on page 37.

Student: Priya N. (an invented student)

Teacher: Mr. Alvarez (invented)

Month: October

Page	Page type and set	Items	Right	Date	Notes
5	Before You Read	4	4	10/6	-
6	Life Has Levels	2	2	10/7	-
7	The Cell: Basic Unit of Life	2	1	10/8	Mixed up cell wall and cell membrane
8	Tissues: Cells Working Together	2	-	-	-
9	Organs: Tissues Working Together	2	-	-	-
10	Organ Systems: Organs Working Together	2	-	-	-
11	Organisms: The Whole Living Thing	2	-	-	-
12	From Cell to Biosphere	2	-	-	-
13	Words to Know	8	6	10/10	Mixed up organ and organ system
14	Which Level?	10	7	10/13	Called the skin a tissue
15	Fill the Pyramid	5	5	10/17	-
16	The Heart Pyramid	5	-	-	-
17	Label an Animal Cell	5	4	10/15	Swapped vacuole and cytoplasm
18	Label a Plant Cell	5	-	-	-
19	Name the Tissue	8	-	-	-
20	Organ Systems	8	-	-	-
21	Build the Ladder	8	-	-	-
26	Quiz, Part A	6	-	-	-
27	Quiz, Part B	6	-	-	-
28	Color the Wheel	10	-	-	-
29	Cut and Paste 1	6	-	-	-
30	Cut and Paste 2	6	-	-	-
31	Cut and Paste 3	6	-	-	-

How to read it

Priya N. has done **7 of 23** scored pages and got **29 of 36** items right with no prompt. **3** pages were all right and **4** carry a note. Every number comes from the table.

What the table points to

The lowest page is The Cell: Basic Unit of Life (1 of 2). That is where the next practice goes. The 16 pages left blank are not tried yet, never wrong.

PREVIEW

Binder Cover

Slide this into the front of a binder. Type a name in the two fields or write it by hand. The divider tabs and a spine label to cut out are on the next page (page 44).

Science - Life Science

LEVELS OF BIOLOGICAL ORGANIZATION

From Cell to Organism

Cell | **Tissue** | **Organ** | **Organ system** | **Organism**

Teacher _____

Class or student _____

PREVIEW