



Grade 7 Metabolism

Review + Hands-On Lessons + Test Prep

The five-step teacher model comes first

A central two-page example models Read, Annotate, Find evidence, Analyze, and Eliminate and justify. Includes what to mark and say, distractor reasoning and guided transfer.

Review before test practice

Four illustrated lessons with eight quick checks and four connected hands-on paper models: body-system transport, information pathways, matter/energy tracing and food-matter rearrangement. Cards, recording pages, preparation and limits supplied.

Inside the 36-page PDF

Shared diagrams/evidence; four MC, select-two, dependent/independent pairs, two-point writing, original six-point extended task and scoring; eight task/answer cards; optional six-point digital setup instructions.

Louisiana and NGSS scope

Targets Louisiana 7-MS-LS1-3/6/7 and corresponding NGSS MS-LS1-3/6/7. Includes information processing, homeostasis and aerobic/anaerobic comparison. Independent review of Metabolism, not the complete Amplify curriculum.

Free study guide available separately

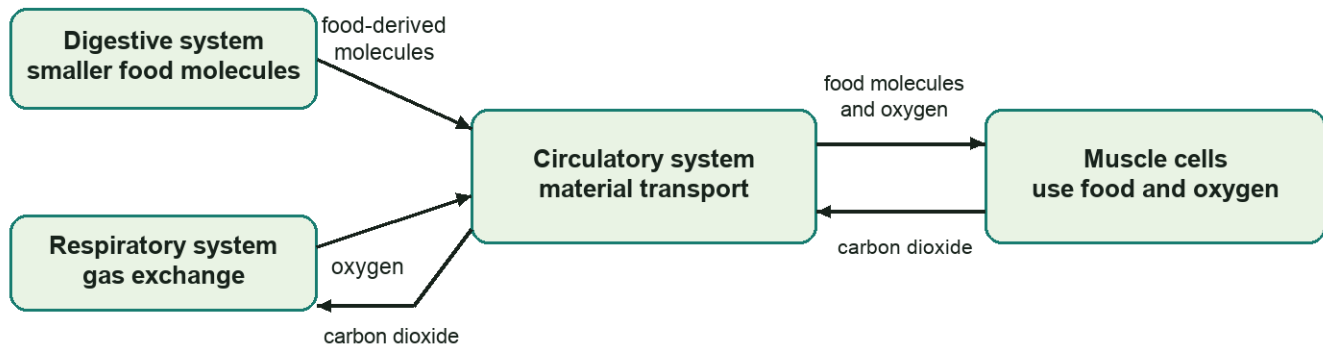
A separate one-page Metabolism guide connects the models and science. Find it free at crackthetestco.com; it is not included inside the paid PDF.

Actual sample pages follow

Both teacher-model pages, two student lessons and four task cards. Worked-example answers intentionally shown; other keys/rubrics reserved for the full resource. PDF only; no premade live Form.

Teacher Worked Example Read and Mark Evidence

I do | Keep this model visible while thinking aloud



Material arrows show selected transport pathways, not the complete anatomy.

Model question Which claim is best supported by the material pathways?

- A. Each body system works independently.
- B. Digestive, respiratory and circulatory systems interact to supply materials to muscle cells.
- C. Muscle cells make oxygen from light.
- D. The circulatory system digests food in the lungs.

1 Read the clues

Say: "The question asks for a claim supported by pathways. I need evidence about interaction, not a list of organ names." Circle supported and underline material pathways. Identify the arrow key before reading the choices.

2 Annotate

Trace digestive system to circulation to muscle cells and label food-derived molecules. Trace oxygen from respiratory system through circulation. Trace carbon dioxide back toward respiratory exchange. Mark these as material flows, not energy arrows.



Teacher Worked Example Analyze and Justify

I do continued | Then guide the We do transfer

3 Find evidence

Point to two different input paths meeting at circulation. Say: "Food molecules and oxygen arrive from different systems. Circulation connects them to muscle cells. Carbon dioxide returns through a connected pathway." Name the model evidence before choosing.

4 Analyze

Say: "The claim must explain how parts work together. Cells form tissues; tissues form organs, and organs contribute to systems. The arrows show supply and removal that support cell processes and relatively stable conditions. They do not show digestion occurring in lungs."

5 Eliminate and justify

A conflicts with the connected arrows. C confuses muscle cells with photosynthetic cells. D assigns digestion to the wrong pathway. Choose B: two input paths and the return path provide evidence of interaction. Have students state claim, evidence and reasoning rather than repeat the letter.

We do transfer

New condition: the oxygen-delivery arrow to muscle cells becomes smaller while food delivery stays available. Ask students to read the change, mark the smaller arrow, find oxygen-use evidence, analyze aerobic respiration and eliminate "food alone guarantees the same aerobic rate." Expected reasoning: lower oxygen delivery can constrain aerobic respiration; the model does not prove all cell reactions stop or identify a medical cause.

Check before independent work

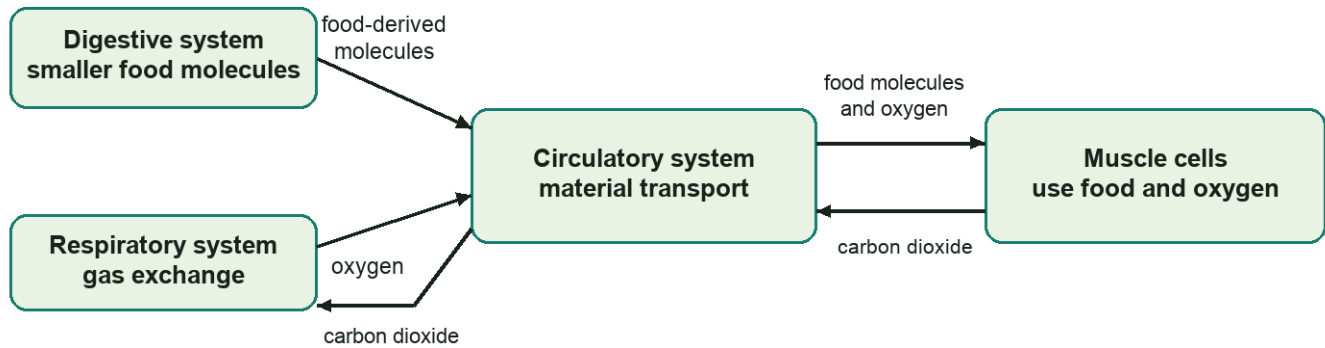
Ask: "Which arrow supports your claim? What does the model leave out?" Accept smaller-scale transport and chemistry as limits. Re-model the difference between material and energy before assigning Questions 1-8.



Review Lesson Body Systems Work Together

7-MS-LS1-3 | Quick check before test practice

Name _____ Date _____



Material arrows show selected transport pathways, not the complete anatomy.

Learn

Digestion supplies smaller food-derived molecules. Respiratory exchange supplies oxygen and removes carbon dioxide. Circulation carries these materials to and from cells. Specialized cells form tissues and organs; interacting systems support functions and homeostasis.

Quick checks 1 and 2

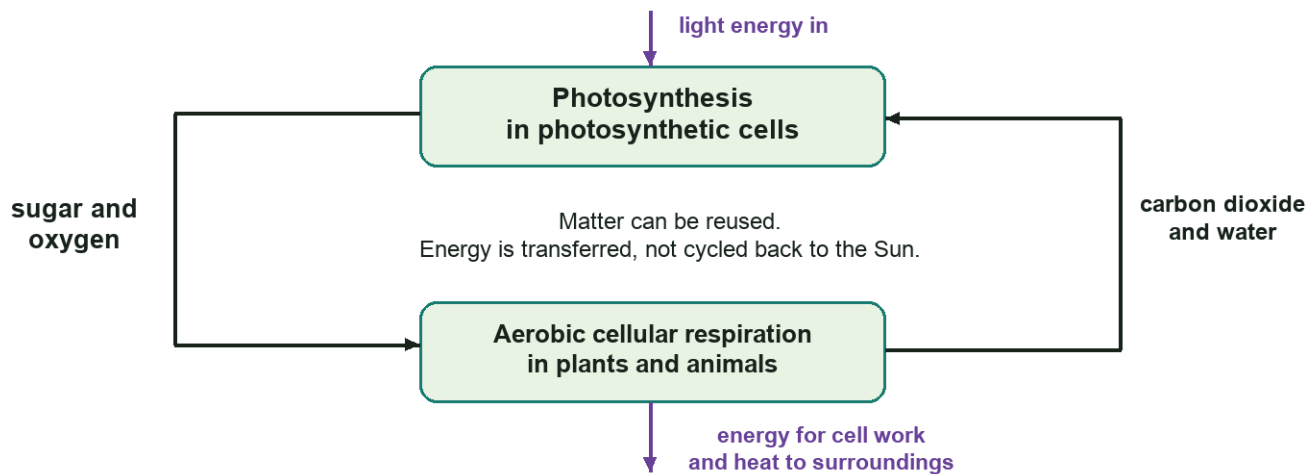
1. Name two connected systems and use an arrow to explain their interaction.
2. Order these from smaller organization to larger: organ, cell, system, tissue. Explain why tissue is not an entire organism.



Review Lesson Photosynthesis and Respiration

7-MS-LS1-6 | Trace matter and energy separately

Name _____ Date _____



Learn

Photosynthetic cells use light energy to rearrange carbon dioxide and water into sugars and oxygen. Plants and animals carry out cellular respiration. Matter can pass through these processes again, but energy is transferred for cell work and as heat. Regrowing plant resources depend on photosynthesis and suitable conditions.

Quick checks 5 and 6

- Trace one matter path through both processes.
- Explain why light is an energy input rather than the source of sugar atoms.



Task Cards 1 to 4

Use the five steps | Answer cards separate

CARD 1 Interacting systems

Food and oxygen reach cells through circulation. Which claim fits?

- A. Systems work alone.
- B. Connected systems supply materials to cells.
- C. Cells make oxygen from light.
- D. Blood makes food atoms.

CARD 2 Information pathway

Which sequence fits a chosen turn toward a clap?

- A. Food -> sugar -> blood.
- B. Light -> muscle -> oxygen.
- C. Receptors -> nerve signals -> brain -> response.
- D. Heat -> blood -> sunlight.

CARD 3 Photosynthesis

Where do the atoms in newly made sugars come from?

- A. Carbon dioxide and water.
- B. Light alone.
- C. Heat alone.
- D. Created from nothing.

CARD 4 Plant processes

Which statement fits living plants?

- A. Respiration occurs only at night.
- B. Every cell photosynthesizes.
- C. Plants never use oxygen.
- D. Plants respire; photosynthetic cells use light for photosynthesis.