

# Biology Flash Cards

## High School

These flash cards were designed with several purposes in mind:

- Provide a **quick, mixed review** of key biology topics in a fun, fast, frequent manner. It's useful also because practice can be spaced out over time.
- Help students become **familiar with the critical graphics, pictures, questions, and vocabulary** that they will see frequently and need to know in math.
- Help students prepare for both **lower level** (recall) and **higher level questions** (compare, analyze, apply, generalize) by practicing these questions sequentially.
- Allow students to **emphasize on process** over computing so they can practice many kinds of questions in the form: explain how *you would find...*
- **Build reading skills** by asking students to slow down and preview a question by asking: "What do I know here?" Next, students find key information in the graphs, titles, and sentences which set the context of the problem.
- Help **students to show thinking** by modeling a condensed but clear explanation.
- Allow students to **practice skills and recall key concepts** independently or with a partner, a teacher, tutor, aid or parent.
- **Make students aware of mistakes to avoid and look for common errors.**
- Help teachers to assign a **quick homework**: "Study these 3 flash cards," and **offer a quick assessment**: "Fill in these four sections from the flash cards."
- **Challenge students at their level** by having students create their own problems or try problems from another grade level.

## Using the Flash Cards

1. Have students quiz each other. One student simply folds back the question/answer section and looks at the picture while the other student quizzes him/her. Model this for students. When finished, switch places and repeat. Students should get really fast!
2. Have an teacher's aid, classroom assistant, or student teacher work with students in small group sessions or one on one. Some classroom helpers feel less secure with math and often need the support of the answers and this sheet provides them.
3. Put a graphic up on the screen and "pepper" the students with questions from the cards (see *Teach Like a Champion* (Lemov 2010) for more information on Pepper). You can differentiate as you see fit.
4. Teacher can call individual students to his or her desk to check for understanding.
5. Have students practice with them at home with parents, older siblings, friends etc.
6. Have students practice with them on their own by covering up the answer side with an index card or sheet of paper.
7. After encouraging students to "study/review" their cards, clear off the answer side and give it as a quiz. You may eliminate some of the questions to make more room for answers. And you can change the questions slightly to avoid a simple "regurgitation" of a memorized answer.
8. Provide the graphic and have students make up questions/answers for each picture.

A teacher from Amesbury, Massachusetts writes:

*The flashcards are going very well. I give them flash card each night for homework and tell them that they have to "own it" for baby quiz the following day. It is good because it's not too big of an assignment. I see kids quizzing each other, and it really helps to reinforce important facts. For the quick quiz, I don't make them regurgitate it; I ask them to do something that parallels the flashcard.*

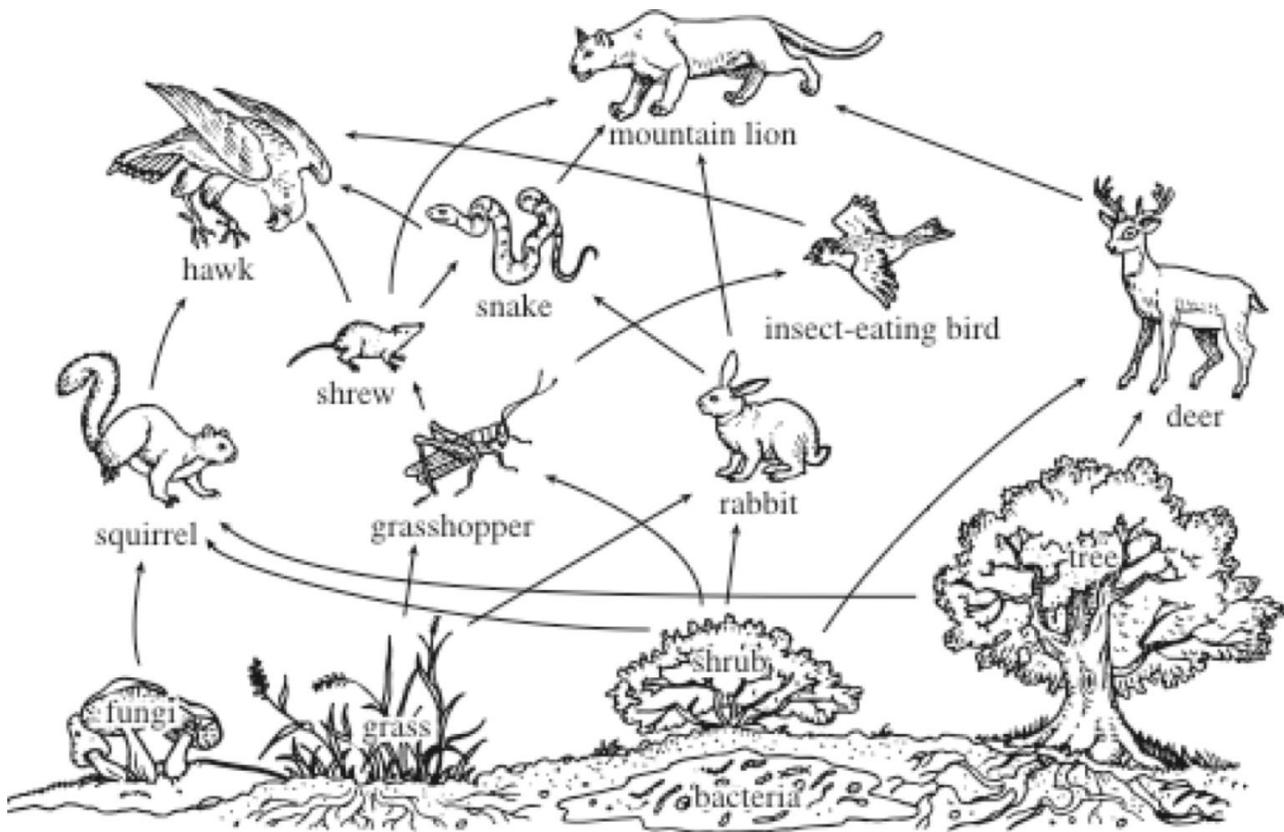
Remember the cards are a flexible tool and you can adjust them as needed. They are not meant to discourage students from writing down or showing their work; rather they are a quick way to verbally review lots of content easily and painlessly.

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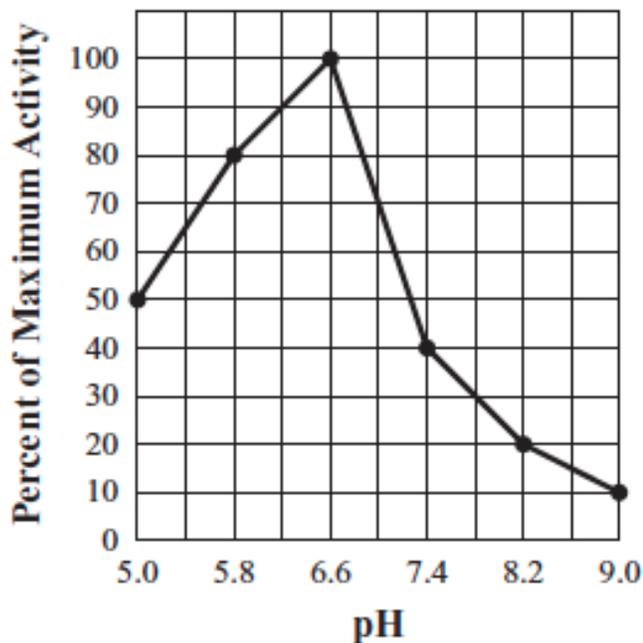
[www.collinsed.com](http://www.collinsed.com)

Lemov, Doug (2010) *Teach Like a Champion*. San Francisco, Jossey-Bass Teacher



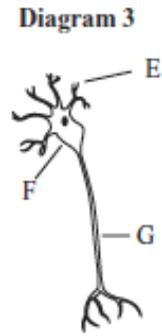
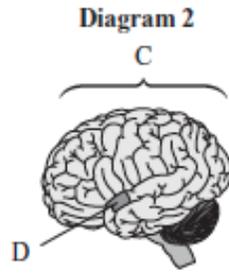
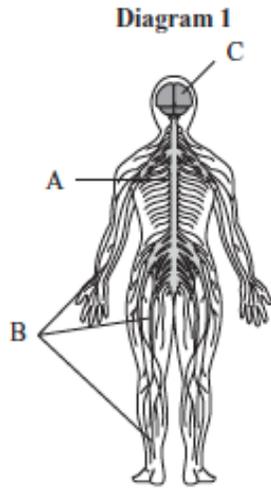
What is this diagram called?	<b>It is a food web.</b>
What does it show?	<b>It shows how the energy flows through the ecosystem.</b>
What are 5 vocabulary words related to this diagram?	<b>Consumer, producer, decomposer, primary, secondary, tertiary, trophic level, auto, heterotroph</b>
What relationship exists between the snake and the rabbit?	<b>Predation</b>
Name two organisms that are in competition?	<b>The bird and the shrew are in competition for the grasshopper.</b>
What would happen if the grasshoppers disappeared from the ecosystem?	<b>Populations of bird and shrew might decrease as well as Hawk and snake.</b>

## Enzyme Activity

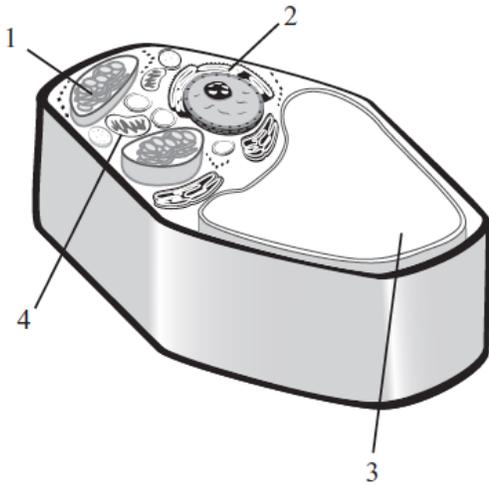


What is this diagram showing?	<b>Enzyme activity at different pHs</b>
What is one purpose of enzymes?	<b>They help speed up chemical reactions like digestion (breaking down proteins and lipids)</b>
At what pH is maximum activity?	<b>pH of 6.6</b>
Describe activity levels when pH goes from 5.0 to 5.8	<b>Activity is rising</b>
What % of enzyme activity level occurs when the pH is at 9.0?	<b>10%</b>
How might enzymes be affected by changes in the pH?	As the solution becomes more acidic enzyme activity is inhibited.

The diagrams below illustrate different levels of organization in the human nervous system. An understanding of how the nervous system works at its various levels helps doctors explain normal body functions and make proper diagnoses when patients are sick.




A diagram of a plant cell is shown below.



Which number identifies the organelle that functions to store water and dissolved salts?

A 1

## Questions

## Answers

Questions	Answers

