

## Teacher's Guide: Surviving Winter

Recommended Grade Level: 5-8

*(also applicable to grades 9-12 for students requiring significant support in learning)*

Suggested Time: About 50-60 minutes spread over one or more class periods, plus additional time to complete a writing assignment

---

### Goals

Following are the big ideas that students should take away after completing this lesson:

- Different animals survive winter in different ways
- Animals have different physical characteristics and behaviors, called adaptations, that help them survive when conditions in the environment change

---

### Vocabulary

(See definitions on page 6.)

- adaptation
- behaviors
- camouflage
- hibernation
- migration
- survival strategy

---

### Key Literacy Strategies

Following are the primary literacy strategies students will use to complete this activity:

- Using background knowledge (screens 2 and 5)
- Categorizing basic facts and ideas (screen 14, writing assignment 1)
- Determining important information (screens 7, 9, and 12, writing assignments 1 and 2)

Note: In addition to using the key literacy strategies listed above, students will use each of the strategies below to complete this lesson:

- Monitoring comprehension
- Synthesizing
- Making predictions
- Developing vocabulary
- Connecting prior knowledge to new learning
- Developing a topic in writing
- Identifying and using text features (photographs, captions, diagrams, and/or maps)

---

### Overview

*Surviving Winter* is a student-directed learning experience. However, while students are expected to work through the lesson on their own, teachers should be available to keep the lesson on track, organize groupings, facilitate discussions, answer questions, and ensure that students meet all learning goals.

The following is a summary of the lesson screens:

- Screen 1: Students learn that they will examine the different ways animals survive winter in the wild.
- Screen 2: Students read about adaptations and how they help animals survive where they live. They also write down examples of changing environmental conditions that cause animals to evolve with certain adaptations.
- Screen 3: Students learn what the goals are for the lesson, which strategies they will be using to complete the lesson, and the important vocabulary words they will use during the lesson.
- Screen 4: Students read about how people adapt to changing temperatures through learned behavior.
- Screen 5: Students learn how instinctive behaviors also help living things respond to changes in the environment. They also write down their thoughts about the instincts humans use to respond to different environmental conditions.
- Screen 6: Students read about the three basic winter survival strategies that animals use: migration, hibernation, and remaining active. They also learn about migration in more detail.
- Screen 7: Students watch a video about the long migration that monarch butterflies make each year from the U.S. to Mexico. They also write down one advantage and one disadvantage for animals that migrate.
- Screen 8: Students read about hibernation in more detail.
- Screen 9: Students watch a video about a type of frog that hibernates in an unusual way. They also write down one advantage and one disadvantage for animals that hibernate.
- Screen 10: Students read about animals that remain active in more detail.
- Screen 11: Students read about adaptations that some animals have evolved over time for surviving winter.
- Screen 12: Students read a passage that provides further information about the three survival strategies. After they have finished reading, students answer three multiple-choice questions to show their comprehension of what they've learned so far.
- Screen 13: Students complete an interactive vocabulary activity, and then choose two words from the vocabulary list and write a new sentence for each word. These tasks demonstrate their understanding of the meanings of the words.
- Screen 14: Students use an interactive activity to categorize information on a concept map as it relates to one of the three different winter survival strategies.
- Final  
Assignment: Students select and complete a writing assignment about the lesson topic.

---

## Before the Lesson

- ❑ Go through each screen of the lesson, including all the interactive activities, so that you can experience ahead of time what students will be doing. As you go through each screen, jot down your own expectations for students' responses.
- ❑ Determine if students will be working individually or in pairs on the lesson. Some students may be able to work independently with little or no support. Students who are less familiar with the subject area or who struggle with literacy skills may benefit from working with another student. An effective way to do this is to pair a stronger student with a less able reader. You can also have students work individually on certain tasks and in pairs on others, depending on their experience and needs. If students will be working in pairs on any portion of the lesson, let them know if they will be expected to type in their notes individually or together.
- ❑ Provide instruction on key vocabulary (vocabulary words are defined in the lesson on screen 3, and on page 6 of this guide).
- ❑ Determine what students already know about winter survival strategies. You may want to start a discussion with questions such as: How does the climate in your region change through the year? What do you do differently when seasons change? In what ways do animals look and behave differently in summer, fall, and winter? Where do animals go during the winter? Where do they come from? How do animals protect themselves from a cold winter? Record their ideas on a chart. This will give you a sense of the background knowledge and possible misconceptions that students have before beginning this lesson. If time allows, return to the chart after students have completed the lesson to add new learning and correct misconceptions. Note: You may want to record their new learning in a different-colored ink so they can see how much they've learned.
- ❑ Arrange computers with Internet access so students can work individually or in pairs.
- ❑ Before students begin, suggest a timeline for completing the lesson, mention the different types of media they will encounter, and let them know how you expect them to submit their work. You may want to provide an outline of this information on a chart, chalkboard, or whiteboard, or as a handout.

---

## Lesson Assessments

The following are descriptions of the lesson features that will be part of the packet of materials that students will submit. Students will use the packet for reference when writing their final assignment. It also serves as a formative assessment tool to monitor students' work as they're progressing through the lesson.

- **Notes** - Students take notes on screens 2, 5, 7, and 9. If time allows, review their notes before students begin their writing assignment.
- **Multiple-choice questions** - Students complete the three questions on screen 12. Walk around to make sure students answer all three questions in the quiz before they move on. If students click to go to the next page before they finish, their work on the quiz will not be saved.

- **Match It!** - Students complete an interactive vocabulary activity on screen 13. They begin by placing the vocabulary terms into the correct sentences. After they finish and save their work, they will be able to check their answers against an answer key. When they are done, they will be asked to choose two vocabulary words and write a new sentence for each word. Sentences should demonstrate a clear understanding of the meaning of each word. An inappropriate response would be “Some animals use camouflage.” An appropriate response would be “Camouflage helps to keep an animal hidden from other animals.”
- **Arrange It!** - Students complete the concept map activity Arrange It! on screen 14. They will assign different behaviors that animals exhibit to the winter survival strategy they describe: hibernate, migrate, or remain active. Students will not be able to check their answers online, so you will need to provide them with correct answers when they are finished with the lesson. You can choose to review the answers as a class or return the corrected packet of materials to students before they begin the final assignment.

Following are the terms students will drag and drop onto the concept map in the appropriate category:

**Winter Arrives → Animal Exhibits This Survival Strategy**

**Hibernate:**

- Stays in its shelter out of harm’s way
- May add a third or more of its weight in fat
- Burns fat, not muscle, and wakes hungry
- Slows its breathing and heart rate

**Migrate:**

- Braves weather conditions and attack from animals on its journey
- Goes where food is more abundant
- Journeys can lead to exhaustion and even death

**Remain Active:**

- Ventures farther from its home to find food
- Develops a thicker hide or warmer fur just before winter
- Huddles in groups to stay warm
- **Final Assignment** - Students complete one final writing assignment. You can choose to let students make their own selection, or assign one according to your goals for the lesson. Use the rubric on page 7 to assess the writing assignments.

---

**Lesson Aids and Extensions**

Use the following suggestions to help students if they are stuck on a particular screen, to prepare students for completing their writing assignments, or as follow-up discussions to reinforce learning.

- **Watching Videos** - Encourage students to watch the videos more than once. After the initial viewing, provide students with a specific content focus to frame their next

viewing(s) of the video. This will help them draw connections between the main topic and the information that the videos have to offer.

- **Participating in Discussions** - Organize class discussions or encourage students to talk about their questions in pairs. You may want to use the following discussion starters.
  - o Why don't all animals use the same strategy when winter arrives, such as remaining active in their home environment?
  - o Compare and contrast winter and summer survival strategies. How have certain animals adapted to survive in hotter climates?
- **Reading the PDF Text** - Before they read the PDF text on screen 10, ask students to consider what preparations different animals make before winter arrives and how they use one of the three survival strategies.
- **Sharing Student Work** - It may be motivational, and a further learning opportunity, for students to post their final essays so that their classmates, peers, and/or parents can see them. This may also provide an opportunity for students to comment on and discuss each other's essays.

If you do not already have access to an online writing community, Teaching Matters™ provides TeXT, free classroom publishing tools that allow teachers and students to create and publish their own online eZine. More information and a free signup are available at Teaching Matters: TeXT (<http://text.teachingmatters.org>).

- **Reflection and Self-Assessment** - After students have turned in their writing assignments, you can choose to have them assess their learning. Bring students together as a whole class or in small groups to discuss the questions below. You may want to return to the chart of their ideas developed before the lesson and record their new learning. You may also have students respond individually to the questions and then convene the class to discuss the chart.
  - o What did you learn?
  - o What was surprising?
  - o What questions do you still have?
  - o What was the easiest for you to understand and do?
  - o What was the most difficult?

---

## Vocabulary Definitions

### **adaptation**

A feature or quality that helps a species survive in its environment. *Structural adaptations* refer to physical features, while *behavioral adaptations* refer to how a living thing acts.

### **behaviors**

The ways living things act in their environment.

### **camouflage**

Colors or a pattern on the outside of the body that hides an animal from the view of others.

### **hibernation**

The act of sleeping, or resting, during winter.

### **migration**

The act of moving from one place to another. In the case of an animal, it gives it a better chance to survive.

### **survival strategy**

Behavior that may improve a living thing's ability to survive in certain conditions.

## Final Assignment Rubric Surviving Winter

- Describe the three different ways that most animals use to survive winter. Be sure to explain how animals benefit from using each strategy as well as what it can cost them. Also, discuss why all animals do not use the same survival strategy.
- Name three different animals that survive the arrival of winter. (You must choose one animal for each survival strategy.) For each animal, describe the adaptation (or adaptations) it has that relates to the survival strategy it uses, and explain how this physical characteristic or behavior helps the animal survive.

4	3	2	1
<p>Provides a clear and accurate response to the question. Ideas are elaborated, with three or more relevant supporting details from the reading passage, video, and other materials in the lesson.</p>	<p>Provides an adequate response to the question. Topic and ideas are generally well organized, with two relevant supporting details from the reading passage, video, and other materials in the lesson.</p>	<p>Provides a generally accurate response, with one supporting detail from the reading passage, video, and other materials in the lesson.</p>	<p>Provides an inaccurate response to the question or fails to address the question. May include misinterpretations. Understanding of the topic is not apparent.</p>
<p>Uses at least three vocabulary words (or a form of the vocabulary words) from the lesson, and uses them all correctly.</p>	<p>Uses two vocabulary words (or a form of the vocabulary words) from the lesson, and uses them both correctly.</p>	<p>Uses one vocabulary word (or a form of the vocabulary word) from the lesson, and uses it correctly.</p>	<p>Does not use any vocabulary words, or uses vocabulary words incorrectly.</p>

---

## Scoring the Rubric

Here are two suggestions for scoring the final assignment rubric. Select the option that best meets your needs or develop your own grading system.

**Option 1:** This option provides one score for each submitted assignment.

Assign a score of 4 or below for the written response (first row of the rubric) and a score of 4 or below for the use of vocabulary (second row of the rubric), for a total maximum score of 8. The interpretation of scores is as follows:

Score	Grade	Narrative Interpretation
7-8	A	Excellent
5-6	B	Good
4	C	Adequate (Fair)
3 or below	D	Minimal

**Option 2:** This option provides two scores for each submitted assignment: one for written content and one for the use of key vocabulary. An advantage of separate scores is that you can weight students' comprehension and composition differently than you do their knowledge of vocabulary. It can also help you identify specific needs for future instruction.

Assign a score of 4 or below for the written response (first row of the rubric) and a score of 4 or below for the use of vocabulary (second row of the rubric) and then score them separately. The interpretation of scores is as follows:

Score	Grade	Narrative Interpretation
4	A	Excellent
3	B	Good
2	C	Adequate (Fair)
1	D	Minimal

The final grade may look like this: A/B (A for content and B for vocabulary use).