

# Writing & Teaching a Lesson Plan

*A great lesson plan is just around the corner. Plan the Teaching, Teach the Plan.*

## WHAT IS IN A CLASS?

Classes should include all of the following parts. In order to move the class along and keep the students engaged, you will need to gauge the amount of time spent on each thing.

1. **Discussion:** Active teaching of concepts and vocabulary. Discussion includes stories, lecture, questions, pictures, maps, demonstrations...
2. **Activities:** This is when your class is active. It's what makes your class experiential. Anytime that you are not directly plugging information into their brains. Mental note: not games.
3. **Experiment:** The one required activity for the class. Yes, required.
4. **Hiking:** Generally not in a lesson plan, but definitely a part of your class. Time to sing songs, point out pertinent parts of nature, check in with students or conduct an activity.
5. **Debrief:** Debriefing should happen more than once. Stop and review activities. What do they mean to the class? Why did we do this activity? Think 75/25. The activity should be 75% of the time and the debrief should be 25%. Lead your students to come to their own conclusions (but ultimately the right answers). A final debrief should happen at the end of each class. Review concepts and vocabulary. Touch base with the bigger picture. What can we do now?

## LESSON PLAN FORMAT

All High Trails lesson plans follow the same format. The following headings should be in sequential order.

1. **Overview:** a blurb about the class that is given to all schools to help teachers better choose camp curriculum for their students. Set in Stone.
2. **Objectives:** what students will walk away from your class knowing. Set in Stone
3. **Vocabulary:** a list of terms that support the class and must be covered in the instruction. Set in Stone
4. **Content Standards:** what California education officials believe elementary students should know from their science classes. Set in Stone
5. **Materials:** list of items essential to teaching your lesson plan. Comes from activities, demonstrations, experiments, stories, etc. Your Choice.
6. **Procedures:** what is going to take place in the class. A play-by-play of what is going to happen in the class. This section uses an outline format. Your Choice.
7. **Things to Think About:** potential problems and solutions that may arise in the field. Extra activities if time allots. Your Choice.

## PROCEDURE

Grab the lesson plan template for the specific class you are working on. Have the class binder, Internet, or other reference source handy, too. Now, showcase your teaching talents by completing a bomb-proof lesson plan. Here's how:

1. **Three Topics:** Condense everything students need to know into three digestible topics. For instance: characteristics of a bird; lifestyle of a bird; a bird's role. These are the three topics you might teach in Feathered Friends.
2. **Divy up your Vocabulary:** Divide the vocabulary words into your three topics. All vocabulary must be included. Although some vocabulary may fit under multiple topics, include it under the topic it falls first.

TOPIC	Characteristics	Lifestyle	Role
-------	-----------------	-----------	------

<b>VOCABULARY</b>	<ul style="list-style-type: none"> <li>• adaptations</li> <li>• binocular vision</li> <li>• camouflage</li> <li>• contour feathers</li> <li>• downy feathers</li> <li>• hollow bones</li> <li>• monocular vision</li> <li>• predator</li> <li>• prey</li> </ul>	<ul style="list-style-type: none"> <li>• abiotic</li> <li>• biotic factor</li> <li>• ecosystem</li> <li>• FWARPS</li> <li>• limiting factors</li> </ul>	<ul style="list-style-type: none"> <li>• consumer</li> <li>• food chain</li> <li>• food web</li> </ul>
-------------------	---	---	--

3. **Outline your class:** now you are ready to outline your procedures. First though, understand the typical class structure:

- A. **Introduction:** You have 3-5 minutes to grab their attention and get them excited about the upcoming class. This could be a story, activity or thought-provoking question. Something that will make them wonder what is yet to come.
- B. **Guided Lessons:** The meat of the class. Vocabulary and content standards are covered here. Discussion, activities, debrief. Teach concepts through discussion, demonstrations and stories. Incorporate an activity to reinforce the topic. Tie in the activity with a debrief. Continue to teach concepts through discussion...again, the meat of the class and the majority of time. Limit activities and do them well.
- C. **The Big Experiment:** Environmental classes have one required experiment. These experiments can be referred to in other classes, because instructors know that every child has been exposed to them. Although not always a “true experiment” by definition, experiments should take place after the concepts and vocabulary have been taught. Always debrief the experiment.
- D. **Wrap Up:** Your class is just about over and the campers are about to forget all the fantastic information you just shared. Stop! Tie this class in to their everyday lives. Review the importance of plants or why not to squish a bug. Help and encourage them to come up with changes they can make at home or school. Always debrief.

Here’s a sample of how class structure would be applied to your class:

<ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Characteristics of a Bird (guided lesson)</li> <li>3. Lifestyle of a Bird (guided lesson)</li> <li>4. Role of a Bird (guided lesson)</li> <li>5. Bird Flight (experiment)</li> <li>6. Wrap Up</li> </ol>
---

4. **Introduction:** determine how you will introduce the class to the students. The introduction is 3-5 minutes to grab their attention and get them excited about the upcoming class. This could be a story, activity or thought-provoking question. Something that will make them wonder what is yet to come.

<ol style="list-style-type: none"> <li>1. Introductory Story: A Penguin Named Lou <ul style="list-style-type: none"> <li>A. Seat students in an area with a high probability of seeing birds.</li> <li>B. Begin story: “Down in the brisk waters of Antarctica, there lives a penguin named Lou. Lou’s life is one of fishing the chilly waters and warming his feathers in the sun. After a good day of fishing and swimming, Lou waddles across the ice to slide down its slippery slope into the ocean with the other penguins. Ah, the life of a bird. Wait. Is Lou really a bird? He just saw an albatross fly overhead and the gull got spooked and opened its wings in flight. Lou has tried again and again to get his wings to fly. Although his days are filled with fun and activity, he falls into a state of sadness, not knowing if he is truly a bird...”</li> <li>C. Discuss with students. Is Lou a bird? Why or why not?</li> </ul> </li> </ol>
---

5. **Guided Lessons:** now that students are intrigued by the question “Is Lou a bird?”, it’s time to move on to your guided lessons. These are the three general topics already determined. Always **bold** vocabulary words in your lesson plan to ensure you are covering all of them. These are not notes. Anyone should be able to pick up your lesson plan and teach your class. Be specific.

<ol style="list-style-type: none"> <li>2. Characteristics of a Bird Discussion <ul style="list-style-type: none"> <li>A. Pull out pictures of local birds. Students use pictures to brainstorm characteristics. As students come up with characteristics, explain <b>adaptations</b> for a bird’s lifestyle and the need for <b>camouflage</b>.</li> <li>B. <b>Feathers:</b> Explain the difference between <b>downy</b> and <b>contour feathers</b>. Show students different feathers.</li> <li>C. <b>Hollow bones:</b> Explain how bones link to flight.</li> <li>D. <b>Eyes/Vision:</b> Explain the difference between <b>monocular</b> and <b>binocular vision</b> and how it links to <b>prey</b> and <b>predator</b>.</li> </ul> </li> </ol>
--

- E. Feet: Explain different feet and their uses.
  - F. Beaks: Explain different beaks and their uses.
3. Lifestyle of a Bird Discussion
- A. Ask students to describe where Lou (from the story) lives. Discuss **habitat**.
  - B. Review **FWARPS** and how Lou's environment fulfills his needs.
  - C. Relate Lou's environment and needs to the local environment and birds. Explain **abiotic** and **biotic** factors and have students look around and come up with examples in relation to birds. Students' have now given examples of an **ecosystem**.
4. The Bird's Role Discussion
- A. Discuss with students. What does Lou eat? Does anything try to eat Lou? Determine that Lou is a **consumer**.
  - B. Discuss what different types of birds consume: berries, seeds, grasshoppers, snakes, other birds, etc.
  - C. Use pictures and items in the forest to demonstrate a **food chain** (acorn-squirrel-hawk). Reiterate that birds are consumers.
  - D. Rearrange pictures and items to demonstrate a **food web** (acorn-woodpecker/squirrel-snake-coyote/hawk). Have students make inferences about connections.

6. **Add Activities!** It's time to incorporate activities into your discussion so students can actively experience the information. Find three or four activities that reinforce concepts in the class or smoothly transition the class from one topic to another. Remember to include the location one can find the activity or write up the complete description and materials needed. All activities must include a complete debrief (questions, answers you as an instructor hope to get, and a tie-in to the topic). Notice that activity titles are underlined.

2. Characteristics of a Bird Discussion
- A. Pull out pictures of local birds. Students use pictures to brainstorm characteristics. As students come up with characteristics, explain **adaptations** for a bird's lifestyle and the need for **camouflage**.
  - B. Feathers: Explain the difference between **downy** and **contour feathers**. Show students different feathers.
  - C. **Hollow bones**: Explain how bones link to flight.
  - D. Eyes/Vision: Explain the difference between **monocular** and **binocular vision** and how it links to **prey** and **predator**.
    - i. Activity: Fowl Ball (found in class binder/activity glossary)
    - ii. Debrief: Is it any harder to catch a ball when seeing out of only one eye? Yes, changes depth perception. How would this help or hinder a bird? Animals with binocular vision can judge distance better than those with monocular vision.
  - E. Feet: Explain different feet and their uses.
  - F. Beaks: Explain different beaks and their uses.
    - i. Activity: Beak Relay (found in class binder/activity glossary)
    - ii. Debrief: Discuss adaptations and how each beak worked with certain types of food. Give examples of different birds and the shape of their beak and describe what they eat. Have the students talk about what they tried to get and why. Take it one step further and play another round. Tell the students that they can use one body part to help them retrieve the food in this round. Discuss adaptations again.
3. Lifestyle of a Bird Discussion
- A. Ask students to describe where Lou (from the story) lives. Discuss **habitat**.
  - B. Review **FWARPS** and how Lou's environment fulfills his needs.
  - C. Relate Lou's environment and needs to the local environment and birds. Explain **abiotic** and **biotic** factors and have students look around and come up with examples in relation to birds. Students' have now given examples of an **ecosystem**.
    - i. Activity: Migration Headache (found in class binder/activity glossary)
    - ii. Debrief: Discuss habitat changes and **limiting factors**. Have students give examples of limiting factors and favorable conditions. Discuss the importance of suitable habitat.
4. The Bird's Role Discussion
- A. Discuss with students. What does Lou eat? Does anything try to eat Lou? Determine that Lou is a **consumer**.
  - B. Discuss what different types of birds consume: berries, seeds, grasshoppers, snakes, other birds, etc.
  - C. Use pictures and items in the forest to demonstrate a **food chain** (acorn-squirrel-hawk). Reiterate that birds are consumers.
  - D. Rearrange pictures and items to demonstrate a **food web** (acorn-woodpecker/squirrel-snake-coyote/hawk). Have students make inferences about connections.
    - i. Activity: Jays and Chickadees (found in class binder/activity glossary)
    - ii. Debrief: Discuss interconnectedness. All the creatures are connected even if they don't appear to be at first. It's fun to watch the juncos call the hawk over if they see the jay is near. A great time to discuss birdcalls and alarms, stressing why birds are so vocal.

7. **Experiment!** You are now ready to add the experiment. Don't forget to write out the debrief for this required activity. Notice that the experiment title is underlined and in italics.

5. *Experiment: Bird Flight*
- A. Explain to students that now they know a good amount about birds and will be "test flying" different birds.
  - B. Conduct experiment.
  - C. Debrief: Discuss which wing design flew the farthest. Why is one wing design better than the other for certain birds? Determine that each bird has its own design to suit its needs.

8. **Time to wrap up this class.** This is a final debrief. Your time to see what students learned and make sure that there is that "take-home piece." Find a way to get students thinking about how this information will affect their everyday lives and what they can do to help their communities environmentally.

6. Wrap Up
- A. Inform students that you will be playing quick quiz and the prize is a Feathered Friends bead.
  - B. Use information from class to ask each student one answerable question. Hand bead to each student.
  - C. Ask group: What can we do in our communities to ensure suitable habitats for local birds? Protect habitats, create nesting sites, don't overhunt, don't use pesticides.
  - D. Ask the final question. Is Lou a bird?

9. **What materials will you need?** Go back through your procedures and look at what you will need to successfully conduct the experiment, activities, demonstrations, anything tangible to teach your students. Include this list in materials.

**MATERIALS:**

*pictures of local birds/mammals*  
*contour and downy feathers*  
*small balls*  
*beak bag (beaks and food)*  
*carpet squares or mats*  
*poker chips*  
*reusable cups*  
*paper*

10. **Things to Think About:** finally, make a few notes in "things to think about."
- **Special Needs:** How will this class be affected if you have a student in a wheel chair? What if you have an autistic student that has an aide with them?
  - **Time Fillers:** What will you do to supplement this class if you have extra time? (extra activity, demonstration, further discussion) Are there class-related songs or activities that you will do on the trail?
  - **Weather:** What do you have prepared if the weather is not conducive to doing an activity? (indoor activity, story)

**Special Needs:** Keep in mind hiking ability of group. Drink water!

**Time Fillers:** Scavenger hunt for signs of birds. 1 Stellar's Jay, 2 snags, 1 nest.

**Weather:** Feathered Friends activities can be done in a variety of locations. If we get pushed inside we will still be pretty good.

## JUST DARN GOOD TEACHING

- **Interact.** Don't talk at them. Find out what they already know. Use their prior knowledge. Ask questions. Encourage questions. Don't let questions get out of hand.
- **Keep it moving.** Sleep is for the cabins. It's your job to keep your classes flowing and moving along. Go from discussion to activity to debrief and back to discussion. Make it make sense.
- **Games.** Not to be confused with activities. There is a time and a place for games at camp. Games are playful interactions that promote socialization, sportsmanship, and fun. Activities in classes are educational experiences that enhance the learning process.
- **Demonstrations.** Again, not to be confused with activities. Demonstrations involve you, the instructor, and possibly one or two students. These are great for breaking up discussions, drawing analogies, and giving examples. They are not experiential for all students. Activities involve all students. Make sure to balance these in your teaching.
- **Be in tune.** Know the needs of your students. If you hike them into the ground, activities won't be very exciting. Weather can really change your class, so be prepared with back up activities.