Middle School Education Lesson Plan

Below is an example of a middle school lesson plan that uses Picasa:

(Found on discoveryeducation.com)

Objectives	Students will learn the following: 1. All types of birds have scientific as well as common names. 2. Specific types of birds can be identified by their sizes and shapes. 3. Each type of bird has characteristic physical and behavioral characteristics.
Materials	For this lesson, you will need: • Bird identification field guides • A photocopying machine • Blank transparencies • Scissors • An overhead projector • Black construction paper • White chalk • 3″ × 5″ index cards 
Procedure	1. First start off by creating a bird collage on Picasa just to show the students all of the different types of birds. This will give them a good background for before they start the lesson. Tell students that they are going to create a bird-identification challenge game for their classmates. Explain that each student will work with a partner to select a bird from a field guide, create a silhouette of the bird, and challenge classmates to identify it. Encourage students to select familiar birds from your area. 2. Give each pair of students the opportunity to use a field guide. Instruct them to choose a bird and write the common name of the bird on the chalkboard. If more than one pair chooses the same bird, ask students to select alternatives so that each pair has a different bird. Adjust the list so that it includes all the birds chosen by the class. 3. Have students write on index cards the common and scientific name of their bird and a description of their bird's physical and behavioral

	characteristics. (They can find this information in the field guides.) 4. Use a copy machine to photocopy from the field guide each bird that students have chosen onto a transparency. 5. Have each pair of students use an overhead projector to project a life-size image of their bird onto black construction paper and trace the outline of the bird with chalk. 6. Have students cut out their bird outlines and attach the index cards to the backs of the outlines, where they cannot be seen. 7. Mount the bird silhouettes around the room. 8. Add the scientific name of each bird to the list on the chalkboard. Have students try their skill at matching each silhouette with its common and scientific name. If they have trouble, allow them to consult their field guides. Use the index cards on the backs of the silhouettes to check answers.
Adaptations	Adaptations for Older Students: 1. Rather than having older students create bird silhouettes, have each student choose a bird from the field guide, write its common name on the back of an index card, and write the bird's scientific name and complete description on the front. Students can quiz each other by having classmates read the front of each card and guessing the common name of the bird described. They can also go on a field trip to look for examples of the birds they chose to describe. 2. The demise of one or several types of creatures often leads to the rapid evolution of others. Discuss why the giant terrestrial flightless birds like *Diatryma* adapted rapidly with the decline of the dinosaurs at the end of the Mesozoic era. 3. Dr. Larry Martin and Dr. John Ostrom offer different explanations about the origin of flight and the evolutionary history of feathers. Dr. Martin concludes that feathers evolved to aid flight, while Dr. Ostrom concludes that feathers evolved to provide insulation. Compare the evidence and debate the two views. 4. The development of *endothermy*, making creatures warm-blooded, is considered an important evolutionary adaptation. Yet high

	metabolism and constant body temperature create physiological demands. Discuss the benefits and drawbacks for a warm-blooded organism. Analyze how human existence would be different if humans were cold-blooded. 5. Discuss and compare the three greatest advantages for creatures that have sustained flight. List several organisms that have evolved partial flight (gliding) and explain how this adaptation is better than not flying at all. 6. The ability to fly is a significant adaptation. Discuss why amphibians, fish, snakes, worms, jellyfish, or other organisms have not developed true flight. What other characteristics do they have that help them survive?
Evaluation	You can evaluate your students on their silhouettes and descriptions using the three-point rubric: • 3 points: Silhouettes accurately drawn and carefully cut out; descriptions complete and well-written • 2 points: Silhouettes carefully drawn and cut out; adequate descriptions. • 1 point: Silhouettes adequately drawn and cut out; less-than-adequate descriptions You can ask your students to contribute to the assessment rubric by establishing criteria for quality of silhouettes and determining how many facts should be included in the descriptions.