

Woodpecker Glyphs

Subject: Reading and Science

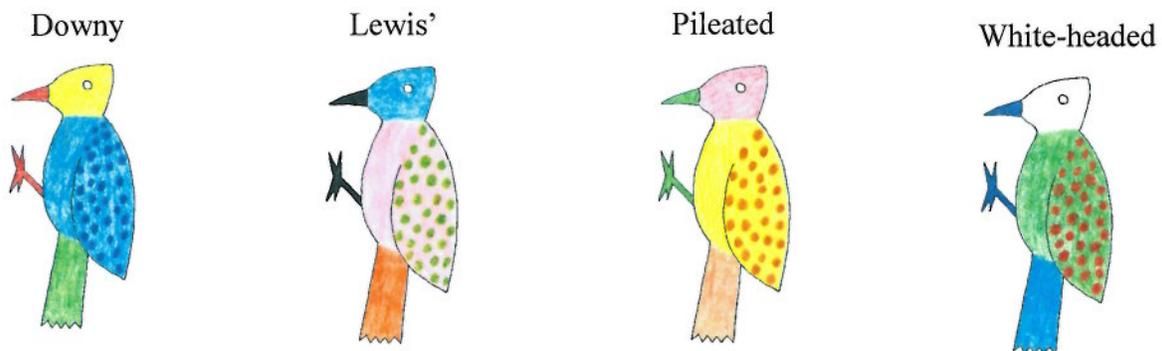
Objective: Students will read information sheets about woodpecker species and complete a woodpecker glyph to check for comprehension.

Materials

- Copies of the woodpecker reading sheets – enough to evenly split the species among the class
- Copies of Woodpecker Outline and Woodpecker Glyph Codes (one for each student)
- Colored pencils, crayons or markers

Procedure:

1. Pass out copies of the woodpecker reading sheets to students. Evenly divide the species among students. Reading levels for the sheets are *Lewis' Woodpecker*: 5.6, *Pileated Woodpecker*: 4.1, *Downy Woodpecker*: 3.9, *White-headed Woodpecker*: 5.1. Students could read in groups or read by themselves.
2. After students have read about a woodpecker, pass out the Woodpecker Outline and Woodpecker Glyph Codes sheets. Explain to students that they are to color the woodpecker outline according to the code that matches the woodpecker they read about. They should try to arrive at the correct answer without rereading their sheet. Have students color their woodpecker according to their codes.
3. If students are not already in specific woodpecker species groups, have the students form groups according to the species they read about and compare their colored woodpeckers. The students' woodpeckers should look the same. If there are differences, have students find where they made their errors.



Pileated Woodpecker

This is the largest woodpecker in Idaho and the largest in North America. It is also the only woodpecker in Idaho that has a red crest in its head. You can find it in northern Idaho in dense forests with big trees.

Pileated woodpeckers love to eat carpenter ants. They will dig large, rectangular holes in trees looking for ants. They will also dig into ant hills looking for tasty treats.

This woodpecker can be loud. They make a loud kuk-kuk-kuk-kuk sound. When they drum on trees, the thumping can be heard close to a mile away!

The male and female will stay in their territory all year long. The male digs out a hole in a tree for a nest. It may take him three to six weeks to dig the nest hole! The female will lay three to five eggs, and both the male and female will sit on the eggs. The eggs hatch in about 24 days, but the young woodpeckers don't leave right away. They will stay with their parents until fall or winter. Then they will find their own place to live.



White-headed Woodpecker

This is the only North American woodpecker with a white head and black body. White-headed woodpeckers are found in Idaho's dry pine forests where ponderosa pines grow.

This woodpecker loves to eat pine seeds. More than half of its diet is made up of pine seeds. To get its favorite food, this woodpecker clings to the side or bottom of pine cones and chips the cones apart. Once it has a pine seed, it wedges the seed into a crack of a tree to hammer the seed and break it apart. It also eats spiders, beetles, ants and flies.

White-headed woodpeckers call year round, often at night. They make a sharp "pee-dink" and "pee-dee-dink" sound. Nestlings make all sorts of sounds. The first week after hatching the nestlings make a "churr" sound. After two weeks, they make constant "peep" sounds. Just before they fly from their nest, they start to make the "pee-dink" sounds.

Both the male and female will sit on the eggs, but the male does most of the sitting at night. While sitting on the eggs, the male and female will communicate with each other by drumming softly from inside and outside the nest cavity.



Downy Woodpecker

This is the smallest woodpecker in Idaho. It is only about six to seven inches long! You can find downy woodpeckers living all across Idaho. They like forests, parks, and orchards.

This woodpecker eats insects in tree bark. You may also see it eating sunflower seeds and suet from feeders in your backyard. When insects are harder to find, it will eat fruit, nuts and seeds.

Both the male and female dig out a nest hole in a tree. It may take the woodpeckers one to three weeks to make the hole depending on the hardness of the tree. The female lays three to seven eggs. In 12 days, the eggs hatch. In about 20 days, the young leave the nest, but they can't live on their own. The young will get food from their parents for about three more weeks.



Lewis' Woodpecker

This woodpecker was named for Meriwether Lewis of Lewis and Clark fame. Lewis was the first person to write down what this woodpecker looked like. It is found in northern and central Idaho. In the winter, they migrate to the southwestern United States.

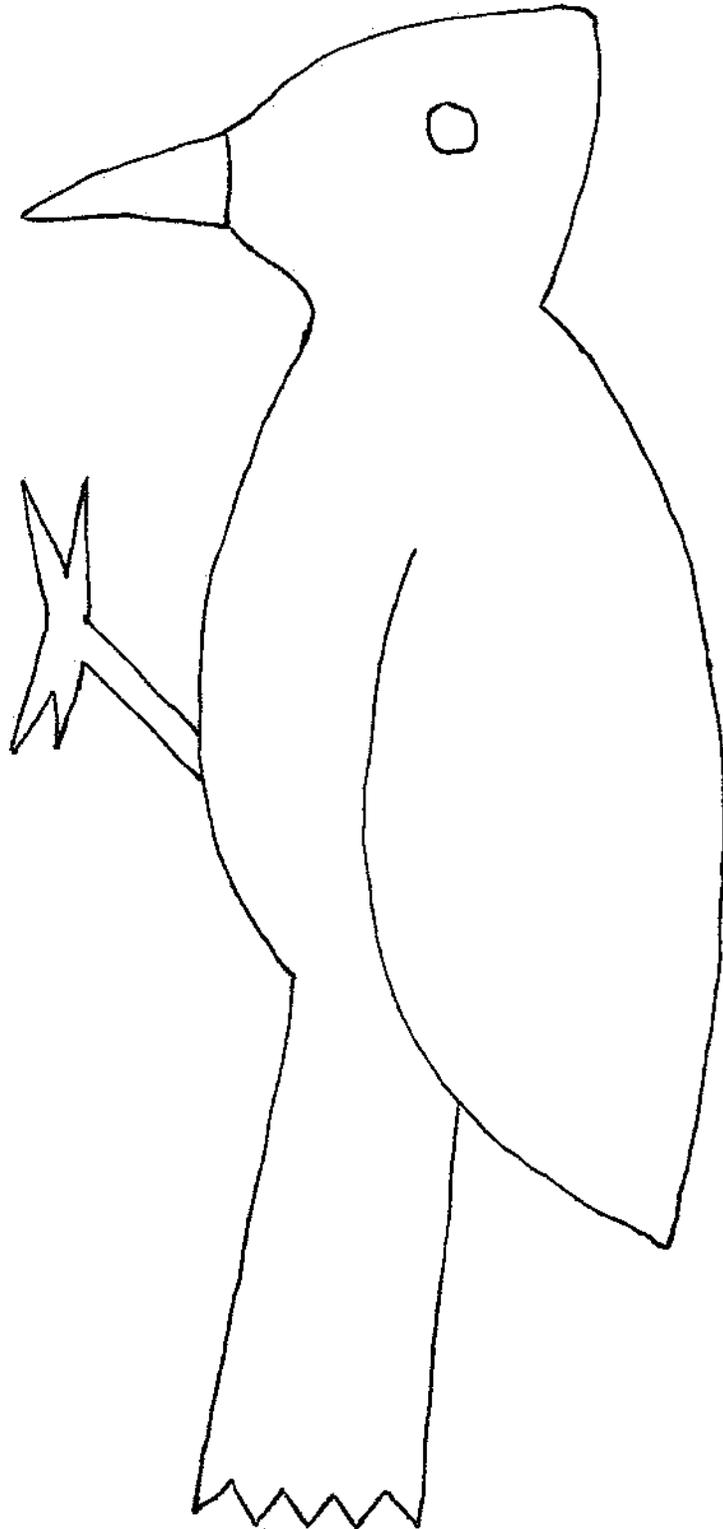
It is easy to tell this woodpecker from other woodpeckers. It is the only woodpecker in Idaho with a pink or salmon-colored belly. They also fly a bit differently than other woodpeckers. Most woodpeckers flap their wings and glide when they fly. Lewis' woodpeckers fly at a sluggish pace with slow, even wing flaps. This woodpecker flies like a crow!

Something else that makes this woodpecker different is that it usually doesn't dig in wood to find food. It catches insects while flying in the air. It may even cache (store) food in bark cracks to eat at a later time. They eat ants, beetles, flies, grasshoppers and caterpillars in the summer and fruit and seeds in the winter.

Lewis' woodpeckers form life-long bonds. Both the male and female sit on the eggs. Six to seven eggs will hatch after about 14 days of the parents sitting on them. In about 30 days, the young will fly for the first time.



Woodpecker Outline



Woodpecker Glyphs Codes

Read the information sheet about a woodpecker in Idaho. Use the information you learned from reading to pick the correct glyph code to color the woodpecker outline. Be sure to read all the choices listed under a number before making your selection. Cut the woodpecker out.

1. If your woodpecker is the largest, color the head red.
If your woodpecker is the smallest, color the head yellow.
If your woodpecker was named after a famous person, color the head blue.
If your woodpecker was named for the color of its head, keep the head white.
2. If your woodpecker lives all across Idaho, color the body blue.
If your woodpecker lives in ponderosa forests, color the body green.
If your woodpecker lives in dense forests, color the body yellow.
If your woodpecker migrates to the southwestern United States, color the body pink.
3. If your woodpecker's young make lots of sounds, color the wings with red dots.
If your woodpecker's young need their parents' help for three weeks after leaving the nest, color the wings with purple dots.
If your woodpecker's young fly when about 30 days old, color the wings with green dots.
If your woodpecker's young stay with the parents until fall or winter, color the wings with orange dots.
4. If your woodpecker catches insects in the air, color the beak, legs and feet black.
If your woodpecker eats pine seeds, color the beak, legs and feet purple.
If your woodpecker loves to eat ants, color the beak, legs and feet green.
If your woodpecker eats insects from bark and seed from feeders, color the beak, legs and feet red.
5. If your woodpecker's eggs hatch in 14 days, color the tail orange.
If your woodpecker's eggs hatch in 24 days, color the tail brown.
If your woodpecker's eggs hatch in 12 days, color the tail green.
If your male sits on the eggs at night, color the tail blue.

Jeop-Birdy



OVERVIEW

In this trivia contest, students and other festival participants learn interesting bird facts while testing their knowledge about bird biology, adaptations, migration, and conservation.

CONTENT AREA

Science, Social Studies,
Geography, Environmental
Education

PEOPLE POWER

At least one adult and two student leaders at the booth

SPACE REQUIREMENT

One booth

ACTIVITY TIME

Approximately 15 minutes,
depending on group size

MATERIALS

- Copies of Jeop-Birdy Round Questions and Jeop-Birdy Round Answers
- Pad of paper, pencils or pens
- A scoreboard
- “buzzers” (for example, tin cans and sticks or bells)
- Masking tape or Velcro
- A timer (for example, a kitchen timer or stop watch)
- Prizes for the winners, such as bird stickers, bird posters, or book marks (See “Festival Freebies” on page 44)

TERMS TO KNOW

extinction, habitat,
migration

Test your Bird IQ! Can you answer a \$1,000 question?

Learning Objectives

Students and festival participants will state interesting facts and basic concepts about birds, and define associated key terms.

Background

The following activities offer applicable background information to this activity: Bird Bingo, Bird Action, and Home Is Where the Forest Is.

Getting Ready

1. You can make “answer” and “question” cards from the Jeop-Birdy Round pages that follow. If you want, you can make a display or poster containing the Single and Double Jeop-Birdy Round answers so that they are covered up until it is time to reveal them. For example, create flaps that you can lift or remove, either by attaching them with masking tape or Velcro. Make sure that you can reuse the cards or posters for the next game.
2. For each game, designate one person as the moderator, one as the scorekeeper, and one as the timekeeper. If there are several leaders for this activity, they can take turns serving in these positions. Depending on the number of participants, Jeop-Birdy can be played by individuals or by teams. (More than one game can be played at a time if you have duplicate sets of the materials and enough leaders.)

Taking Flight

1. Give each moderator a copy of the Jeop-Birdy Rules, the Final Jeop-Birdy Round information, and the two sets of Jeop-Birdy Round Answers and Questions. Give each timekeeper a timer.
2. Decide how long each Round should last, depending on the number of players and available time. Allow about 5 to 10 minutes per Round.

Assessment

The Jeop-Birdy activity itself can be used as an assessment tool. Make note of which questions are missed or unanswered most. Also, challenge participants to create a few of their own questions, possibly creating a certain category, such as “Our State Bird” or “Nearby Birds.” (See page 319 for *Official Bird Symbols of North American Countries.*)

Jeop-Birdy Game Rules

1. A total of 10 categories includes 5 for Single Jeop-Birdy and 5 for Double Jeop-Birdy. Each question in a category has a point value (for example, 100, 200, 300, 400, or 500).
2. The moderator posts the categories and point values on the board where all players can see them. As each point value is played, it is uncovered (or crossed out).
3. Each Jeop-Birdy Round lasts for a set amount of time (for example, 5 minutes). At the beginning of each new Round, the timekeeper sets the timer immediately after reading the "answer." The timekeeper gives a one-minute warning, then tells players when time is up for each Round.
4. The first player picks a category and value, such as "Bird Songs for 600 points."
5. The moderator reads the answer (in this case, "Four and twenty of these were baked in a pie").
6. Individuals or teams "buzz in" if they think they know the question (in this case, they may simply raise their hand). The first player to "buzz in" gets the first chance to respond.
7. Players must respond in the form of a question (For example: "What are blackbirds?") Responses not given in question form are considered incorrect.
8. If a player responds correctly, that player or team gets the points. If incorrectly, other players (or teams) have the opportunity to buzz in and respond. For older players, who may be overly bold in their efforts to "guess," consider subtracting those points from their score if they have an incorrect response.) The scorekeeper keeps track of players' scores on the scoreboard.
9. The player who gives the correct response picks the next category and point value.
10. Play continues for each round until all questions have been answered, or until the timekeeper says the time is up for that round. After the first two rounds are completed, move on to the Final Jeop-Birdy Round.
11. For the Final Jeop-Birdy Round, players wager points before seeing the "answer." They cannot wager more than the total amount of points they've earned by the end of the first two rounds. Players can write their wager on slips of paper and hand it to the moderator before the answer is posed.
12. After wagers have been placed, the moderator reads the final "answer" and players write their questions on a slip of paper.
13. When each player (or team) presents its question, correct responses allow the wagered points to be added to their total score. For older players, incorrect responses cause their wagered points to be subtracted from their total score.
14. The player or team with the most points wins!

ZOOM IN, ZOOM OUT!



- As a class activity, students can come up with an extra round of questions. Students interested in high-tech media can create a Power Point version of the game.
- To add excitement, use a three-panel display board trimmed in blinking Christmas lights, with the answer cards contained in library-book pockets that are glued onto the display.
- In the State Category, any state may be used. Volunteers can help student leaders adjust these questions to fit their own state (and other states not listed here).
- A bird biologist or naturalist can provide interesting facts about local birds to enrich this activity and clarify questions that may come up as Jeop-Birdy is played. Contact state wildlife departments, local colleges and universities, and nonprofit conservation and birding organizations.

IN STEP WITH SCIENCE STANDARDS

- The standards addressed in this activity depend on the questions asked.



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Jeop-Birdy Round "ANSWERS"

	Bye-Bye Birdie	Bird Brained	Save the Birds	Bird Words	Potpourri
\$100	This word is what birds become when there aren't any more of them left.	The smallest bird in the world is one of these.	If you are out hiking and come upon a bird's nest, this is something you shouldn't do.	This is another word for the mouth of a bird.	Bird watchers use these to bring birds into closer view.
\$200	Only 100 years ago, thousands of these birds could be seen in the skies. Over-hunting quickly drove them to extinction.	The largest egg in the world comes from this bird.	Birds often fly into these "invisible" structures, found everywhere from skyscrapers to your house.	The claws of a bird of prey are called this.	The seasonal movement of birds from one place to another is called this.
\$300	Because it had never seen humans and therefore had no fear of them, this large flightless pigeon is now extinct.	One of the fastest birds in the world is this one.	Use of these chemicals has led to declines in the populations of many bird species.	When birds lose old feathers and grow new ones it is called this.	These books are often used to help identify birds.
\$400	This is one of the major causes of extinction in the world.	This part of a bird is made up of the same material as our fingernails and hair.	These domestic predators kill hundreds of millions of birds each year.	The name of this type of nest, made by woodpeckers, is also what a hole in your tooth is called.	In order to avoid competition, this is the reason birds migrate.
\$500	This bird, the U.S. symbol, was almost driven to extinction by the use of a pesticide called DDT.	Associated with the quote "Nevermore," these black birds may be among the most intelligent.	This Act is designed to help species of wildlife whose populations are in trouble.	This is another word for the feathers of a bird.	This is made up of food, water, shelter, and space.



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Jeop-Birdy Round "QUESTIONS"

	Bye-Bye Birdie	Bird Brained	Save the Birds	Bird Words	Potpourri
\$100	What is extinct?	What is a hummingbird?	What are collecting, touching, or disturbing birds or their nests?	What is the bill or beak?	What are binoculars?
\$200	What is the Passenger Pigeon?	What is an Ostrich?	What are windows?	What are talons?	What is migration?
\$300	What is the Dodo?	What is a Peregrine Falcon?	What are pesticides?	What is molting?	What are field guides?
\$400	What is habitat loss?	What are beak and feathers?	What are cats?	What is a cavity?	What is to find food?
\$500	What is the Bald Eagle?	What are Ravens?	What is the Endangered Species Act?	What is plumage?	What is habitat?



Double Jeop-Birdy Round "ANSWERS"

	Where in the World	Bird Songs	Bird Symbols	State Birds	Amazing Adaptations
\$200	This pole is home to penguins, not polar bears.	Nicknamed "Rockin'" in a popular song, this bird's own song is considered mellow.	U.S. Symbol.	Illinois.	This special feature of birds is shared with no other living animal.
\$400	This continent is home to the Ostrich, the largest bird in the world.	Seen singing on TV by millions of children, this large yellow bird is of an undetermined species.	Canadian baseball team.	Colorado.	Baby birds develop in these.
\$600	The largest species of this nectar-sipping bird is found in the Andes.	Four and twenty of these were baked in a pie.	Not a real bird of prey, but Seattle's football team.	New Jersey.	Birds do this to find food, escape from predators, and travel from one place to another.
\$800	This is where most of Colorado's migratory birds fly for the winter.	If this bird does not sing, Papa's gonna buy you a diamond ring.	Symbol for peace.	Pennsylvania.	This is why some male birds are brightly colored.
\$1000	This country is home to kiwi fruit and Kiwi birds.	This bird is always "paired" with a tree in a popular Christmas song.	This bird is pictured on Mexico's flag.	Louisiana.	Vultures rely on this sense, but for most birds is not well developed.



Double Jeop-Birdy Round "QUESTIONS"

	Where in the World	Bird Songs	Bird Symbols	State Birds	Amazing Adaptations
\$200	What is the South Pole (also known as Antarctica)?	What is the American Robin?	What is a Bald Eagle?	What is the Northern Cardinal?	What are feathers?
\$400	What is Africa?	Who is Big Bird?	What are the Bluejays?	What is the Lark Bunting?	What are eggs?
\$600	What is a Hummingbird (Giant Hummingbird)?	What are Blackbirds?	What are the Seahawks?	What is the American Goldfinch?	What is flying?
\$800	What is western Mexico?	What is a Mockingbird?	What is a Dove?	What is the Ruffed Grouse?	What is attracting females?
\$1000	What is New Zealand?	What is a Partridge?	What is the Crested Caracara?	What is the Brown Pelican?	What is smell?

Final Round

Moderator gives the final "answer": The creature that many consider to be the ancient ancestor to modern birds.

Players guess the question: What is archaeopteryx?

Food to Fit the Bill

Subject: Science

Objectives: Students will investigate the diversity in bird beaks.



Materials:

- slotted spoon
- nutcracker
- medicine dropper
- sponge
- 4 sets of tongs
- 3 sets of tweezers
- potato peeler
- chopsticks
- straw
- strainer
- tablespoon
- scissors
- ladle
- turkey baster
- envelope
- Food to Fit the Bill Worksheet
- whole walnuts
- 5 pans or dishes
- Styrofoam cubes or peanuts
- tall, thin vase
- potting soil
- gummy worms
- food coloring for colored water
- popped corn
- loose-leaf tea or herbs
- rice grains
- bark or piece of Styrofoam
- molding clay
- stick or pencil
- bunch of grapes
- string
- illustrations of bird beaks

Procedure:

1. Prior to the lesson set up the following stations:
 - o Station One: A tall, thin vase filled with colored water, medicine dropper and sponge.
 - o Station Two: A dish of potting soil with gummy worms buried throughout, tongs and straw.
 - o Station Three: Whole walnuts or other nuts spread throughout a pan, tweezers and nutcracker.
 - o Station Four: A dish of water with one-inch Styrofoam cubes floating in shallow water, chopsticks and tongs.
 - o Station Five: A dish of water with loose-leaf tea or herbs, strainer and slotted spoon.
 - o Station Six: Popped popcorn, tongs and an envelope.
 - o Station Seven: Rice grains tucked into the bark of a log (or Styrofoam), tweezers and tongs.
 - o Station Eight: Molding clay wrapped around a stick, kids' scissors and a potato peeler.
 - o Station Nine: A dish of water with one-inch Styrofoam cubes floating in shallow water, ladle and turkey baster.

- o Station Ten: Bunch of grapes hanging from a string, tweezers and tablespoon.
2. Ask students to close their eyes and picture a bird. Go around the room and have students tell what bird they were visualizing. When all students have had the opportunity to share their bird, discuss diversity. There are so many types of birds, perhaps one student was thinking of a bird of prey, and another student was thinking of a hummingbird.
 3. Bring adaptations into the discussion. Why are there so many different kinds of birds? What makes the birds so different?
 4. Share some illustrations of different birds and discuss beaks and bills. Why are they so diverse? What purpose does the beak serve?
 5. Refer to the different stations around the classroom.
 6. Tell students that each station has items that represent a type of food eaten by various birds. Ask students if they can guess what each bird would have to do in order to reach their food supply. Does the shape of a bird's beak limit their food supply?
 - 1) Nectar (colored water) needs to be sucked out. (hummingbird)
 - 2) Worms (gummy worms) need to be dug and pulled out. (snipe & shore birds)
 - 3) Seeds (walnuts) need to be cracked open. (sparrows & finches)
 - 4) Fish (Styrofoam pieces) will probably need to be picked out of the water. (heron)
 - 5) Fine bits of vegetation (tea or herbs) need to be strained out of the water. (ducks, geese and swans)
 - 6) Flying insects (popcorn) need to be caught in wide openings. (swallows)
 - 7) Small insects (rice) need to be picked and pried out of small crevices. (woodpeckers)
 - 8) Meat (molding clay) needs to be pulled off of bones. (owls & hawks)
 - 9) Fish (Styrofoam cubes) need to be scooped out of the water. (pelicans)
 - 10) Fruit (grapes) need to be pulled off branches. (robin & cedar waxwing)
 7. Pass out Food to Fit the Bill worksheet. Divide the students into ten equally numbered groups. Each group is sent to a station. Have students predict which "beak" will be the most efficient at picking up or getting at the "food" provided. Then allow a few minutes for the students to try the "beaks" and write down their answers. Have students guess a species of bird whose beak works like the demonstration. Rotate students around to each station.
 8. After lab work is done, discuss with students their predictions, results and chosen bird species for each beak type.

Food to Fit the Bill

At each station, first predict which "beak" will work best to retrieve the "food" provided. Try each "beak" and write down which beak was most effective. Write the name of a bird that has that type of beak.

Station	Food	Prediction	Best "Beak"	Bird with this Type of Beak
1	Nectar (colored water in vase)			
2	Worms (gummy worms)			
3	Seeds (nuts)			
4	Fish (Styrofoam pieces)			
5	Fine bits of plants (tea or herbs)			
6	Flying insects (popcorn)			
7	Insects in wood (rice)			
8	Meat on bone (clay on stick)			
9	Fish (Styrofoam pieces)			
10	Fruit on a tree branch (bunch of grapes)			

