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| Subject: | Science |
| Grade Level: | 2nd |
| Title of Lesson: | Metamorphosis and Life Cycle of Frogs |
| Standards: | SC.2.L.16.1: Observe and describe major stages in the life cycles of plants and animals, including beans and butterflies.  LA.2.1.6.2: The student will listen to, read, and discuss familiar and conceptually challenging text.  LA.2.6.1.1: The student will read informational text (e.g., directions, graphs, charts, signs, captions) to follow multi-step instructions, answer literal questions, perform tasks, learn tasks, and sequentially carry out the steps of a procedure.  LA.2.1.6.1: The student will use new vocabulary that is introduced and taught directly. |
| Objectives: | Content:   * Students will be able to define metamorphosis (Knowledge). * Students will be able to compare and contrast the frog at each stage of the life cycle (Analysis). * Students will be able to create diagrams of the life cycle of the frog (Synthesis).   Language:   * Students will be able to write down the definition of metamorphosis in their own words. * Students will be able to discuss the similarities and differences of the frog at each stage of the life cycle. * Students will be able to read about each stage of the life cycle and arrange it into the correct order. |
| Learning Strategies: | * KWL Chart * Videos * Realia * Interactive Games * Cooperative Learning * “Find Your Match” |
| Key Vocabulary: | * Metamorphosis * Tadpole * Life Cycle * Froglet * Tadpole with legs * Frog Eggs * Adult frog |
| Materials: | * Aquarium with some tadpoles and frogs * KWL chart * Pencil * Computers/Internet * Lifecycle of a Frog handout (cut and paste) * Scissors * Glue * Crayons * Quiz on lifecycle * <http://www.gudli.com/kids/games/frog-life-cycle.html> |
| Stage of Language Acquisition: | Speech Emergence (Level 3) |
| Motivation:  (building background) | 1. Bring out the aquarium with the tadpoles and frogs. 2. Give the students the opportunity to look at the tadpoles and frogs (Realia). 3. Ask them what the tadpole is and then ask them what the frog is. 4. Students will be given a KWL chart on tadpoles/frogs and they are to complete the first two sections as best they can. 5. Tell the students to relax and let their minds explore. This is a time for them to make connections to their prior knowledge about frogs. 6. Tell them to think about the animals they just looked at, books they have read, movies they have seen, and their personal experiences with frogs. 7. Have them record what they know in the section titled What I Know. 8. Then, have the students think for a moment about what they would like to learn from the unit. 9. Then have them record their questions in the section titled What I Want to Know. |
| Presentation:  (comprehensible input, lesson delivery, use of learning strategies, HOT skills, interaction) | 1. We will begin the lesson by introducing the term metamorphosis by writing it on the board. 2. I will tell the students that they are going to watch a short video of the metamorphosis of a frog. 3. Students will watch the video clip of the life cycle of a frog: <http://www.youtube.com/watch?v=GgCL3JenMCs> 4. After they have viewed the video, I will ask them to talk with their small group about what they think metamorphosis means. 5. I will circulate around the room listening to the student’s discussions. 6. I will then ask for students to share their ideas about what metamorphosis is. 7. I will write down the student’s ideas on the board around the word metamorphosis. 8. I will then share the definition of metamorphosis with the students by writing it on the board. 9. I will then ask for several students to read the definition of metamorphosis out loud giving the ELL student the opportunity to volunteer to read the definition without putting them on the spot. 10. Next, we will discuss how all the changes that the frog experiences from the time it is an egg to the time it turns into an adult frog is called the frog’s life cycle. 11. At this point, most of the vocabulary will be introduced to the students. I will use a flow chart displayed on the SmartBoard to model what the life cycle looks like. 12. It will start with a picture of frog eggs and the label frog eggs, then it will go to a picture of a tadpole with the label tadpole, then to a picture of a froglet with the label froglet, etc. 13. Each step of the life cycle will be represented with a picture and a label, and I will discuss each stage with the students. 14. I will then ask the students what stages of the life cycle we can see in our aquarium (adult frogs and tadpoles). 15. Students will now discuss with their shoulder partner what are the similarities and the differences in the frog at each stage in the life cycle. The main focus would be what physical changes are happening to the frog at each stage of the life cycle. 16. Again, I will circulate to listen to student discussions and offer my assistance when needed. 17. On the SmartBoard, I will have a file open with two columns. One that is labeled “Same” and one that is labeled “Different”. 18. I will ask for input from each pair, and allow them to write their ideas on the SmartBoard under the appropriate category. |
| Practice and Application:  (meaningful activities, feedback) | Students will do three activities to practice what they have learned. Each activity will be done with a partner and will be set up like centers that they will rotate to. I will remain at one center, so that I can interact more one on one with the students and find out if they are grasping the content and give them helpful feedback if necessary.  Center 1:   1. Paired students will log on to <http://www.gudli.com/kids/games/frog-life-cycle.html> 2. They will watch the cartoon overview of the frog life cycle. This overview has all of our vocabulary highlighted throughout. All the vocabulary words are said, written, and include a visual representation which is beneficial to every student especially ELL’s. 3. After watching the cartoon overview, the paired students will play two interactive games in which the students put the stages of the life cycle in the right order. 4. The activities give direct feedback.   Center 2:   1. Students will create a picture of the life cycle of the frog. 2. Students will draw the life cycle of the frog starting with the egg and ending with the adult frog. 3. Each stage must be labeled with the correct vocabulary and have an arrow pointing to what comes next. 4. If I had an ELL paraprofessional, I would place her at this center, so that she can give feedback to the students after reviewing their drawing of the life cycle.   Center 3 (Teacher Center):   1. This center requires more reading on the part of the student. 2. Students will be given a worksheet that has a little bit of written information about the frog at each stage of the life cycle. 3. The student will cut out each section, read it, and then paste it in the correct order. 4. I would like to listen to the students read out loud in this center, so I will encourage the students to take turns reading the stages of the life cycle. 5. I would also like to give the student to complete the activity without my assistance, but then give them feedback afterwards. If they aren’t quite getting it right, I will ask them to tell me in their own words about the life cycle to see if they know it and then guide them from there. |
| Review and Assessment:  (review objectives and key vocabulary) | Review:   1. To review we are going to play “Find Your Match”. 2. Students will be given a card with either the picture or the definition of their vocabulary including the stages of the life cycle. 3. Students will then walk around the room reading their cards to one another and will try to find their match. 4. Once every student has identified their match, they will share with the class their word and picture. 5. After this, students will complete their KWL chart with what they learned.   Assessment:   1. Students will be given the frog quiz to assess their understanding of the frog life cycle. 2. After the students have completed their quiz, they will trade their quiz with their shoulder partner and grade each other’s paper. 3. After the papers are graded, they will be returned to their owner. 4. The students will then discuss with their shoulder partner the questions they got wrong and why they think they got it wrong. 5. I will circulate while they are doing this. 6. Then we will have a class discussion about the things that they struggled with, so that I know what I potentially need to go back and review with them. |
| Extension: | Have the students brainstorm other animals that may go through metamorphosis. Butterflies are usually the first thing that students think of. Attempt to get a butterfly cocoon, so that students can witness the metamorphosis take place in the classroom. Student could take pictures and record changes that they see in a science journal. |

**Frog Quiz NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**



1. Frogs spend their lives in the \_\_\_\_\_.

A. in the water

B. on the land

C. in the water and on land

2. Frogs lay their eggs \_\_\_\_\_.

A. in the water

B. on the land

C. in the water and on land

3. After a frog egg hatches, the animal is called a \_\_\_\_\_.

A. tadpole

B. froglet

C. frog

4. Where does this newly-hatched animal live?

A. in the water

B. on the land

C. in the water and on land

5. Does this newly-hatched animal have legs?

A. Yes

B. No

6. This newly-hatched animal breathes using its \_\_\_\_.

A. lungs

B. gills

C. tail

7. As a frog matures, it grows \_\_\_\_.

A. a tail

B. legs

C. gills

8. As a frog matures, it loses its \_\_\_\_.

A. tail

B. legs

C. eyes

9. What organ does an adult frog use to breathe?

A. gills

B. spiracles

C. lungs

10. Does an adult frog have a tail?

A. Yes

B. No

11. What does metamorphosis mean?

**Life Cycle of Frogs**

**DIRECTIONS:** Cut apart the life cycle sequence and paste them into the correct order.

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| Eggs hatch into tiny tadpoles. They swim, eat and grow! The tadpoles use their tail to swim. |
| The froglet grows front legs. The lungs begin to grow. Its eyes and mouth grow larger. The tail gets smaller. |
| The female frog lays a lot of eggs in the water. The eggs hatch in 10 days. |
| A tadpole grows back legs. The tadpole’s tail will start to get smaller. |
| The frog does not have a tail. It can jump onto land. It does not live in water. |

**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Life Cycle of Frogs**

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**Life Cycle of a Frog**

**KWL Chart**

**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| --- | --- | --- |
| **What I Know** | **What I Want to Know** | **What I Learned** |
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