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| <b>Title:</b>                          | Life Cycles of Animals that go through Metamorphosis   |
| <b>Grade(s):</b>                       | 4 <sup>th</sup>  |
| <b>Subject(s):</b>                     | Science  |
| <b>Author:</b>                         | Michell McCurdy and Denise Bonds   |
| <b>Overview:</b>                       | The teacher will discuss the stages/phases of the life cycle for animals that go through complete and incomplete metamorphosis.  |
| <b>Content Standards:</b>              | SC(4) 5.2 Describing life cycles of various animals to include incomplete and complete metamorphosis.<br>TC(3-5) 1. Use input and output devices of technology systems.<br>TC(3-5) 2. Use various technology applications, including word processing and multimedia software.<br>TC(3-5) 5. Practice safe use of technology systems and applications.<br>TC(3-5) 12. Create a product using digital tools. |
| <b>Local/National Standards:</b>       | NSES Develop understanding of the life cycle.  |
| <b>Primary Learning Objectives:</b>    | Using technology programs/software, the students will design a presentation that shows the life cycle of a frog, toad, mealworm, damsel fly, or butterfly.   |
| <b>Additional Learning Objectives:</b> | The students will construct an understanding of Prezi, PowerPoint, or Glogster to create a presentation about the chosen animal.   |
| <b>Approximate Duration of Lesson:</b> | 120 minutes  |
| <b>Materials and Equipment:</b>        | <ul style="list-style-type: none"><li>• Books and magazines with pictures and descriptions of animals that go through metamorphosis.</li><li>• Cards with the name of an animal on them and directions for the group assignment (see Task Card Information attached)</li><li>• Reminder guide for using Prezi, PowerPoint, and Glogster.</li></ul>   |
| <b>Technology Resources Needed:</b>    | <ul style="list-style-type: none"><li>• Computers for each group</li><li>• Internet access</li><li>• Websites: <a href="http://www.prezi.com">www.prezi.com</a> and <a href="http://www.glogster.com">www.glogster.com</a></li><li>• Microsoft PowerPoint</li></ul>  |
| <b>Background/Preparation:</b>         | <ul style="list-style-type: none"><li>• Review stages of the life cycle of animals that go through metamorphosis.</li><li>• Review process for using Prezi, PowerPoint, and Glogster.</li></ul>  |

- Procedures/Activities:**
- Step 1**
- Show students pictures of a baby mammal, such as a puppy or kitten, and its adult form, dog or cat. Ask “Are these the same kind of animal? How are they different at these different times in their life cycle?” (Baby is like the adult, only smaller, weaker, etc. but has the same physical structure.)
  - Next, show pictures of a beetle grub worm and an adult beetle. Ask the same questions as above. (Yes they are the same kind of animal, but it has very different physical structures and habits during the different stages of its life. Animals that have these different stages are said to go through a **metamorphosis** (write term on board).
  - Explain that birds and mammals do not go through metamorphosis, but insects, fish, and amphibians do.
  - There are two types of metamorphosis: **Complete**, which has 4 distinct stages in the life cycle, and **Incomplete**, which has only 3 stages.
- Step 2**
- Tell students they will be working as a team to create a presentation that describes the life cycle of an animal that goes through either complete or incomplete metamorphosis.
  - They will use Prezi, PowerPoint, or Glogster to create their presentation. Display Prezi on the screen and have volunteers from each group tell you the process for using Prezi.
  - Display PowerPoint on the screen and have volunteers from each group tell you the process for using PowerPoint.
  - Display Glogster on the screen and have volunteers from each group tell you the process for using Glogster.

\*Remind students that writing is a major part of this assignment and that they should check their grammar, spelling, and punctuation before publishing.



- Step 3
- Have each group choose a task card for either a frog, toad, meal worm, damsel fly, or butterfly.
  - Tell students that they must work as a team and decide which presentation format they would like to use and who will be responsible for each part of the presentation.

Make sure students understand task requirements.

1. Choose a presentation format- Prezi, PowerPoint, or Glogster.
2. Decide who will be responsible for each part of the presentation.

Each part of the presentation must include at least one picture. Sound is optional; you may have sound but it is not required.

- Step 4
- Have students work in teams to decide on their format, make team assignments, research their animal and design their presentations.
  - Walk among groups to facilitate their process by answering questions and making suggestions as necessary.
  - When students are finished, have them save their presentations as appropriate.
- Step 5
- Have each group present their product on the specified day.
  - Place links for web based presentations on the class blog to be shared with parents.

**Attachments:**

-Task Card Information

-Assessment Rubric

**Assessment Strategies:**

See Rubric

**Extension:**

Students will share their presentations with their classmates. This will include a question/ answer session and discussion among students. Web based projects will also be linked to the class blog where parents may make comments.

**Remediation:**

Give students readings that are on their reading level which focus on life cycles of animals that undergo metamorphosis.

**Task Card Information:**

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| <b>Title</b>   |
| <b>Introduction-</b> Begin the story of your animal.<br>Where does your animal live? What does your animal eat?  |
| <b>Stage 1-</b> Name and describe the first stage of life. Where does your animal live? What does your animal eat (if anything)? How long does it remain in Stage 1?                                   |
| <b>Stage 2-</b> Name and describe the second stage of life. Where does your animal live? What does your animal eat? How long does it remain in Stage 2?  |
| <b>Stage 3*-</b> If your animal has a distinct 3rd stage in its metamorphosis, describe the third stage of life. Where does your animal live? What does your animal eat? How long is it in this stage? |
| <b>Stage 4-</b> Describe the fourth stage of life. Where does your animal live? What does your animal eat? How long does it remain in this stage?  |
| <b>Conclusion-</b> Write a summary statement. Did your animal go through a complete or incomplete metamorphosis?   |
| *(Amphibian task cards will have only 3 stages)  |

**Assessment Rubric for Life Cycles of Metamorphing Animals**

| Criteria/Score                                    | Yes, Completely | Somewhat | Not at All |
|---|-----------------|----------|------------|
| Project includes all aspects listed on Task Card. |                 |          |            |
| Student made proper use of technology tools.      |                 |          |            |
| Scientific content of project is accurate.        |                 |          |            |

**Options for Designing a Product to Demonstrate Learning**

| Role                | Audience                      | Format                          | Topic         |
|---------------------|-------------------------------|---------------------------------|---------------|
| writer<br>scientist | self<br>peer group<br>parents | PowerPoint<br>Prezi<br>Glogster | metamorphosis |