Grade level: 7th grade Life Science

Lesson plan designed by Danielle Grubb, Lauren Rodriguez, Lindsey Rogers, Destinee Thomass, and Russell

Taxonomy and Classification

1. Goal(s): Students will understand how to classify any animal and different properties of animals like the mollusk.
2. ALCOS: 4.) Describe organisms in the six-kingdom classification system by their characteristics.
3. Objective(s): SWBAT define the different classifications.

SWBAT classify different animals into their correct classifications.

SWBAT discuss and write why the shells of mollusks are so sturdy.

SWBAT apply nanotechnology to other ideas of how it can be useful to its application to calcium carbonate and other materials.

IV. Safety Accommodations

None

V. Special Accommodations

None

1. Materials

Students will work in groups of three, PowerPoint on classification for teacher, classification worksheet (30), Abalone shells (20), calcium tablets (20), weights (5), plastic tubes (5), worksheet for lab in lab kit(30)

1. Motivation (10 minutes)

The students have been learning about what the make-up is of a living creature, like what tissues and organs are. Ask students to name different organs. Now they will be looking at the bigger picture and classifying the animals by looking at the differences between them. Show video on classifications:

<http://www.teachertube.com/viewVideo.php?video_id=256169>

Show students pictures of different animals. Have the students say what classification they think each animal will be in.

VII. Lesson Procedure

1. Go through the powerpoint on classification. (20 minutes)
2. Ask the students to go through what their classification would be. Cross curriculum with history and homo sapiens, homo homo sapiens, etc. (2 minutes)
3. Hand out worksheet with classification problems and collect when done and grade later. (10 minutes)
4. Show students pictures of different animals. Have the students do a group discussion on the differences and similarities of the animals to each other using the information they learned from watching the video. (10 minutes)

**Day 2**

1. Goal(s): Students will understand how to classify any animal and different properties of animals like the mollusk.
2. ALCOS: 4.) Describe organisms in the six-kingdom classification system by their characteristics.
3. Objective(s): SWBAT define the different classifications.

SWBAT classify different animals into their correct classifications.

SWBAT discuss and write why the shells of mollusks are so sturdy.

SWBAT apply nanotechnology to other ideas of how it can be useful to its application to calcium carbonate and other materials.

IV. Safety Accommodations

None

V. Special Accommodations

None

1. Materials

Students will work in groups of three, PowerPoint on classification for teacher, classification worksheet (30), Abalone shells (20), calcium tablets (20), weights (5), plastic tubes (5), worksheet for lab in lab kit(30)

VI. Motivation

Do a group discussion and make a KWL on nanotechnology (10 minutes)

VII. Lesson Plan

1. Introduce what a mollusk is and talk about their shells. (3 minutes)
2. Discuss what the shell is made of and ask students what they think will happen if a fishing weight is dropped on it. (3 minutes)
3. Ask students if they know of any other items that are made out of calcium carbonate; calcium pills, chalk, marble, etc. (2 minutes)
4. Ask students what they think will happen if you drop a weight on these items. This will be their hypothesis. Go over instructions for lab. (3 minutes)
5. Students will do experiment. Procedure and worksheets will be in lab kit. (15 minutes)
6. Show magnified pictures of chalk and pills vs. shells. Explain to students These pictures are shown on the nano scale, or 10-9 . Tell students what they are actually looking at/explain what it means for something to be built on the nano scale. (5 minutes)
7. Transition: Do the students notice any differences?

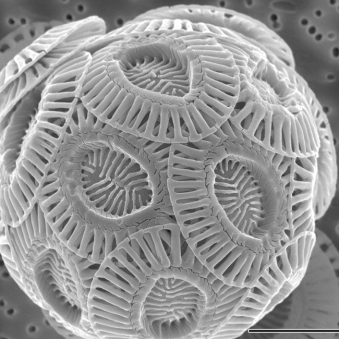
VIII. Closure

1. Ask students why it is important for shell to be built like that. Show what happens if you heat the shell and melt away the structure that strengthens it. (5 minutes)
2. This concept has been applied to man-made materials. Show video about nanotechnology. <http://science360.gov/obj/video/c37d3c55-0f96-4efb-ae5f-73f13cb1f2a1/silver-saver> (5 minutes).
3. What do you use in your everyday life that uses nanotechnology? (1 minute)

IX. Assessment

Quiz students on classification/nanotechnology (5 minutes)

Chalk/Calcium pills:



Abalone Shell:

