

Lesson Overview

Grade level(s):

Elementary School (K-5), Grade 3,
Grade 4, Grade 5

Subjects(s):

Biology/Life Science, FOSS-Related

Topic:

Characteristics of living things

Big ideas(s):

All living things share common characteristics.

Vocabulary words:

reproduce, respire (release energy from food), use energy, excrete, grow, move, sense, respond

What you need:

1)Record sheet (attachment), 2)chart paper entitled: "All students think that living things have these characteristics in common", 3) chart paper entitled: "Some students think that living things have these characteristics in common", 4)written sentence starters: " What makes you think that?" "But what about _____?" "What evidence do you have that _____?"

Grouping:

Brainstorming: Small groups of 3 or 4
Then whole group for sharing out and group discussion.

Setting:

classroom

Time needed:

Brainstorming - 10 minutes
Reaching consensus and generating list
- 30 minutes

What Do Living Things Have In Common?

Logistics

Getting ready:

Xerox 1 record sheet (attachment) for each group. Make sentence strips for discussion starters. If you are teaching the entire unit, make science journals for each student.

Lesson Implementation / Outline

Introduction:

Tell students that today they will be working as a community of scientists. Their job as a class will be to create a list of what all living things have in common. They will use the list on another day to help them decide which objects are living and which are non-living.

Assign students to groups of 4 for brainstorming activity. Hand out record sheet and assign recorder. Give each team time to write down their ideas, when they agreed or disagreed with each other, and questions that they have about living things.

Activity:

Do brainstorm activity. Interact with groups, ask questions, record responses or discussions for informal assessment of background knowledge, misconceptions, and level of participation.

Choose a student from each group to report one thing that their group agreed all living things did or had. List on board. Provide definitions of vocabulary that some students may not know.

Have class vote if they agree with each characteristic listed. Those that everyone agrees with are written on the "All students agree..." chart.

Those characteristics not agreed upon will then be discussed. Introduce sentence starters to help students ask clarifying questions and challenge others to defend their ideas. Encourage students to be open to other people's ideas and at the same time, let someone know if they disagree with him or her and why.

If there is still disagreement about a characteristic after discussion, or if there is not time to discuss all characteristics, then write those characteristics on the "Some people think..." chart.

Checking for student understanding:

Use record sheets, and student small group and whole group discussions to assess student background knowledge and ability to provide reasons to support his/her ideas.

Wrap-up / Closure:

Have a student volunteer read the two charts. Tell students that the class will use the charts in later science lessons and that the class will go back and review the charts from time to time to see if they want to add anything or make changes.

Extensions and Reflections

Reflections:

I have found that for students to have a good understanding of the structures and functions of living things and how they adapt to environmental changes, they must first have an opportunity to reflect upon and discuss their basic understanding of what a living thing is. That is the primary goal of this lesson and the lesson that follows it.

Attachment

Size

[What Do Living Things Have in Common.pdf](#) 13.79 KB

NGSS Topics

Kindergarten through Grade 5:

3. Inheritance and Variation of Traits

4. Structure, Function, and Information Processing

NGSS Disciplinary Core Ideas

Grade 3:

3-LS1 From Molecules to Organisms: Structures and Processes

Grade 4:

4-LS1 From Molecules to Organisms: Structures and Processes

NGSS Performance Expectations

NGSS Performance Expectations:

3-LS1-1

4-LS1-1

NGSS Science and Engineering Practices

NGSS Science and Engineering Practices:

Asking Questions and Defining Problems

Developing and Using Models

Planning and Carrying Out Investigations

NGSS Crosscutting Concepts

NGSS Crosscutting Concepts:

Patterns

Systems and System Models

Standards - Grade 3

Life Sciences:

3. Adaptations in physical structure or behavior may improve an organism's chance for survival. As a basis for understanding this concept:

a. Students know plants and animals have structures that serve different functions in growth, survival, and reproduction.

Standards - Grade 5

Investigation and Experimentation:

6. Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:

h. Draw conclusions from scientific evidence and indicate whether further information is needed to support a specific conclusion.

Links:

- <http://www.nextgenscience.org/3ivt-inheritance-variation-traits-life-cycles-traits>
- <http://nextgenscience.org/3sfp-structure-function-information-processing>
- <http://www.nextgenscience.org/3ls1-molecules-organisms-structures-processes>
- <http://www.nextgenscience.org/4ls1-molecules-organisms-structures-processes>
- http://www.nap.edu/openbook.php?record_id=18290&page=385
- http://www.nap.edu/openbook.php?record_id=18290&page=387
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