NGSS

SPIRAL REVIEW

LIFE • EARTH • PHYSICAL

NGSS Spiral Review Product Overview:

Introduction:

Spiral review is a teaching method that involves revisiting previously learned concepts systematically and repetitively over some time. This download will outline a spiral review approach covering Earth, Life, and Physical Science topics to prepare students for the 8th-grade state academic achievement science test.

What is Spiral Review?

Spiral review is a teaching strategy emphasizing regular and repeated exposure to key concepts and skills over time. It involves incorporating previously learned material into ongoing instruction to reinforce understanding, retention, and application.

Why Use Spiral Review?

- **Promotes Long-Term Retention:** Regularly revisiting concepts helps solidify understanding and promotes long-term retention.
- **Addresses Learning Gaps:** Spiral review allows teachers to identify and address any gaps in students' understanding before they become significant obstacles.
- **Builds Confidence:** By regularly encountering familiar material, students gain confidence in their abilities and feel more prepared for assessments.
- **Supports Mastery Learning:** Spiral review provides opportunities for students to achieve mastery by revisiting concepts until they are fully understood.
- **Encourages Active Engagement:** Engaging with material multiple times encourages active learning and deeper understanding.

How to Use Spiral Review:

1. **Identify Key Concepts:** Determine the essential concepts and skills students need to master for the state academic achievement science test in Earth, Life, and Physical Science.
2. **Develop a Schedule**: Plan a schedule for the 16-week period, allocating specific time slots for spiral review activities.
3. **Integrate into Lesson Plans:** Incorporate spiral review activities into weekly lesson plans.
4. **Provide Feedback**: Offer timely feedback on students' performance during spiral review to reinforce correct understanding and address misconceptions.
5. **Monitor Progress**: Continuously monitor students' progress throughout the 16-week period to identify areas of improvement and adjust instruction as needed.
6. **Review Test Format:** Familiarize students with the format and structure of the state academic achievement science test to ensure they are adequately prepared for the assessment.

Question formats: (See samples on the following pages)

- Multiple choice
- Short answer
- Fill in the blank
- Concept mapping/graphic organizers

Disclaimer:

This spiral review guide is provided as a general overview of topics supported by the Next Generation Science Standards (NGSS) and is not specifically associated with any particular state academic achievement science test. While the content covered aligns with typical 8th-grade science curriculum standards, it may not fully reflect the scope and sequence of any specific state assessment. Teachers should consult their state's standards and test blueprints for guidance on content coverage and assessment expectations.

Each week is broken down by chapter and material and the standard assessed

NGSS ALIGNED

Weekly Spiral Review Topics Assessed

Week #1
- Nature of Science – Scientific method, quantitative/qualitative data, scientific theory vs scientific law, scientific tools

Week #2
- Nature of Science – SI Units, graphing data, evidence-based data, source credibility, cause and effect relationships

Week #3
- Intro to Sciences (Physical, Life, Earth) – Lab safety, scientific fields of study, different spheres, biological organization, making inferences

Week#4
- Principles of Ecology – Ecosystems, succession, food webs, carbon cycle
- Force and Motion – Newton's
  speed, graphing motion
- Mapping Earth's Surface – to

Week #5
- Population Dynamics – geneti
- Rocks and Minerals – rock cyc
- Energy – types of energy, La
  and unbalanced forces

Week #6
- Cells Structure and Function
  unicellular and multicellular o
- Electricity and Magnetism –
- Plate Tectonics – layers of Ea

Week #7
- Cells Processes and Energy –
- Forces that Shape Earth – pl
- Waves & Electromagnetic Sp
  wavelength, electromagnetic

Week #8
- Genetics – Heredity – genes,
- Earth's Changing Surface – s
- Sound, Light, Mirror, and Lens
  transparent, and translucent

Name _____ Date _____ Class _____

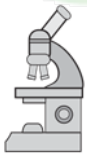
WEEK 1 REVIEW

Nature of Science MS-ETS1

1. List the steps of the Scientific Method.

Nature of Science MS-ETS1

2. Write the name of each tool you would find in a lab below each image.



Nature of Science MS-ETS1

3. Experiment: Measuring the Temperature of Different Objects

Objective: To measure the temperature of different objects and observe the relationship between temperature and two different objects: metals and nonmetals.

What would be the dependent variable in this experiment? _____

Nature of Science MS-ETS1

4. How do hypotheses help us to solve problems using science?

_____
_____
_____
_____
_____

Nature of Science MS-ETS1

5. Which of the following would you use to determine how acidic or basic something is?

a. A petri dish
b. A pH indicator
c. Thermometer
d. Hot plate

Nature of Science MS-ETS1

6. Which type of data is measured in specific, numerical quantities?

a. Qualitative
b. Quantitative

Nature of Science MS-ETS1

7. Explain the difference between a scientific theory and a scientific law.

_____
_____
_____
_____
_____

©NGS

Name _____ Date _____ Class _____

WEEK 5 REVIEW

Population Dynamics LS1-4

1. How does reproduction affect the genetic diversity of a population?

a. It has no
b. It decrea
offspring
c. It increas
offspring
parents.
d. Depending
most likel

Rocks and Minerals ESS2-1

2. Label each step of the rock cycle below.

Energy PS3-2

3. Compare e
potential ener

Rocks and Min

5. Compare a
one forms ex

Population Dy

7. In a ____
relationship, t
benefit from
presence. Be
flowers, and
flowers provi
nectar.

Name _____ Date _____ Class _____

WEEK 5 REVIEW

Energy PS3-2

9. Pliers are a helpful tool for gripping, bending, or cutting. Squeezing the handles when using pliers best describes which type of force?

Input force | Output force

Rocks and Minerals ESS2-1

10. During sedimentary rock formation, what is the name of the process where loose sediments are transformed into solid rock?

a. Cementation
b. Compaction

Energy PS3-2

11. How would yo
image below?

Rocks and Minera

13. Which type o
subjected to high
causing a change

a. Sedimentary
b. Metamorphic
c. Igneous

Population Dynam

14. Invasive spe
because ____.

a. They don't co
diversity
b. They displace
native species
c. They increase
d. They have no
ecosystem

Name _____ Date _____ Class _____

WEEK 6 REVIEW

Cells Structure and Function LS1-1

1. Which of the following is NOT a part of cell theory?

a. Al living things are made up of cells
b. Cells are the basic unit and structure and function of living things
c. All cells come from preexisting cells
d. Cells can reproduce independently

Cells Structure and Function LS1-2

2. What part of a cell is considered the powerhouse of a cell?

a. Nucleus
b. Mitochondria
c. Cell wall
d. Cytoplasm

Electricity & Magnetism PS2-3

3. List two factors that could influence the magnetic forces between two magnets.

1.
2.

Plate Tectonics ESS2-3

4. Scientists have found fossils of whales and other marine animals in the sediment on Andes Mountain. How is this possible?

_____
_____
_____
_____

Cells Structure and Function LS1-2

5. Circle the list that best describes prokaryotes.

- No nucleus
- Single-celled organisms
- Reproduce asexually by binary fission

- Have a nucleus
- Have a cell membrane
- Reproduce asexually or sexually

Plate Tectonics ES2-3

6. Put the sequence of events of the steps involved in seafloor spreading in the correct order.

- The new ocean floor is formed in the gap where it pulled apart
- Hot melted rock called magma rises from the Earth
- Underwater mountains form called mid-ocean ridges
- When the magma pushes up, the ocean floor pulls apart

Cells Structure and Function LS1-3

7. Arrange the following terms in hierarchical order, from the smallest to the largest level of organization in living things: *population, tissue, organ, cell, organism*

©NGS

Thank you for sharing NGS Magnified with your students!

Terms of Use

Copyright © NGS Magnified, LLC (formerly Nitty Gritty Science, LLC.) All rights reserved by author Dr. Erica Colón. This product is to be used by the original downloader only. Copying for more than one teacher, classroom, department, school, or school system is prohibited. This product may not be distributed or displayed digitally for public view. Failure to comply is a copyright infringement and a violation of the Digital Millennium Copyright Act (DMCA). Clipart and elements found in this PDF are copyrighted and cannot be extracted and used outside of this file without permission or license. Intended for classroom and personal use ONLY.

Contact Information:

Email: admin@nittygrittyscience.com

Website: www.NGSmagnified.com

TPT: https://www.teacherspayteachers.com/Store/Nitty-Gritty-Science