Literacy Strategies

In this section you will find strategies that will help your students to comprehend science texts and other written materials dealing with science content. These strategies can be used by teachers in every content area to support literacy instruction. There are 11 strategies in this section. Use the open (+) and close (-) to view the strategies below.

+ Life Connections
- Life Connections

Ask students to identify three new words in a text selection, list these, define them, and then write examples of how each word is connected to their lives. Take time to have students share these with the rest of the class.

Example

Vocabulary Word: Wave
Life Connections: My brother and I looked at waves on a vacation trip. We watched as wave after wave hit the sandy beach near our beach house on South Padre Island.

+ Pictures Worth...
- Pictures Worth...

Have visuals around the room illustrating students' current science lesson or unit. These can include drawings, posters, models, displays, mobiles or other visuals.

Example

In an investigation about models make sure that you have of models around the room (i.e., a globe, a solar system model, etc).

+ Concepts First
- Concepts First

Ask students to skim a section to see what the text is about, using pictures as additional clues. Discuss the big ideas in the text as a class and make a list of these on a board or flipchart. Ask your students to then read the text for more details.

+ Science Word Wall
- Science Word Wall

To create a Science Word Wall, place the alphabet in big letters on your classroom wall. When a student comes to a word that he or she does not know, the student prints it in large letters on an index card or construction paper to go on the Wall. If possible, the student also illustrates the word. You may want to limit your Science Word Wall to something like five new words a week.

Example
My Glossary

Students can make their own glossary of terms. Ask students to:

1. identify a word they do not know and write it down.
2. find and write the definition.
3. illustrate the word, if possible.
4. write a sentence using the word.

Example from Science Content: Fossils.

Term: Fossil

Definition: Fossil: any evidence of past life

Sentence: We went to the museum and viewed an exhibition full of dinosaur fossils.

"Think-Pair-Share" for New Words

1. Ask students to identify a new word in their text.
2. Give students time to think of a definition for the word.
3. Ask the students to work in pairs to refine their definitions.
4. Ask students to share their definitions with the class.

Guide Questions

- Guide Questions
Make a short list of questions to ask students to consider as they read a text passage. They should write responses to the questions as they encounter the information in the text.

+ Peer Teaching
- Peer Teaching

1. You will need to generate a short vocabulary list relating to a science lesson.
2. In small groups, ask students to look up one word on the list. They then need to figure out the best way to teach the word's meaning to others. They might choose to draw pictures of the word or to act it out using a "charades" approach.

+ Concept Maps
- Concept Maps

Concept maps help students see the connections between words and ideas. Ask students to read a short science passage. When they finish, ask them for one big idea from the passage. Use this idea to begin a concept map on a board or flipchart, by putting the idea into a circle or box. Use lines to show the relationships between the ideas or concepts in the boxes or circles in the map. With practice, students can create their own concept maps for science ideas.

Example

```
  Clouds
  Temperature  Weather  Wind
    \     /     /     /  \
   Air  Rain
```

+ 3-D Concept Map
- 3-D Concept Map

To make a 3-D Concept Map, students should:
1. pick a big topic, such as "rocks".
2. write the topic in large letters on a card.
3. write "subtopics" on other cards to hang off the big topic card with string or yarn.
4. ask students to illustrate the subtopics.
5. hang the mobiles up around the classroom.

Example

```
Weather
    \     /     /  \
   Precipitation  Moving Air  Wind
      \     /     /     /  \
     Rain  Snow  Wind Speed  Wind Direction
```

+ Tic-Tac-Toe with Words
- Tic-Tac-Toe with Words

Tic-Tac-Toe is a good review of concepts and vocabulary.
1. On the board, draw a tic-tac-toe grid. In each box write a vocabulary word.
2. Split the class up into two groups. (Team "X" and Team "O").
3. Ask the teams to pick one person each to be their Speakers.
4. Taking turns, ask each Speaker to call out a vocabulary word on the grid.
5. The Speaker's team has to give a quick definition of the word. If they are correct, write an "X", for Team "X", or an "O" for Team "O" in the box.
6. The object is to form a line of "Os" or "Xs" just like tic-tac-toe to win.

Example

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Evaporation | Thermometer | Precipitation
-------------|-------------|-------------
Weather      | Clouds      | Compass     
Wind         | Condensation| Wind Vane   
```

Search for K-5 Literacy Strategies

**Perform a Quick Search** using the search box below to find the 10 most relevant K-5 literacy strategies in the Education GeoSource database.

**Access the Education GeoSource database at:** https://egs.americangeosciences.org

**Enter your search terms**

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literacy
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Search
Informational Text Strategies: Systems Thinking Analysis
American Geosciences Institute (AGI)
The goal of this activity is to have students analyze Earth science informational text using a systems-thinking approach. First, students review (or are introduced to) each of the spheres that comprise the Earth system (i.e. atmosphere, biosphere, geosphere, hydrosphere). Next, students read a...

Resource Type: Curricula and Instruction, Teaching Strategies

The Essential Principles of Climate Literacy
National Oceanic and Atmospheric Administration (NOAA)
Climate Literacy: The Essential Principles of Climate Science presents information that is deemed important for individuals and communities to know and understand about Earth's climate, impacts of climate change, and approaches to adaptation or mitigation. Principles in the guide can serve as...

Resource Type: Curricula and Instruction, Curriculum Materials
Grade Level: K, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

Atmospheric Science Literacy Framework
University Corporation for Atmospheric Research (UCAR)
"People who are literate in atmospheric science understand the ""big ideas"" of the relevant scientific knowledge. Armed with this understanding, they will have the basis to communicate about the Earth's atmosphere in a meaningful way, and be...
The Environmental Literacy Council

The Environmental Literacy Council is an independent, non-profit made up of scientists, economists, and educators striving to connect teachers and students to science-based information on environmental issues. Our website offers over 1000 pages of background information and resources on...

Winged Ambassadors, Ocean Literacy through the Eyes of Albatross

The classroom activity page Winged Ambassadors, Ocean Literacy through the Eyes of Albatross is available free online courtesy of NOAA, Oikonos, and other partners. Albatrosses, charismatic and threatened seabirds, are ambassadors for a clean ocean because they traverse vast oceanic regions ...

Next Generation Climate for Grades 6-8

Next Generation Climate is a six lesson, interdisciplinary, middle school climate change curriculum that has students investigate the cause of the global temperature change, research the major repercussions of climate change, and find out how they can monitor and minimize those repercussions. Next...
Informational Text Strategies: Close Reading
American Geosciences Institute (AGI)
The goal of this activity is for students to develop strategies that will help them understand complex informational texts. Individually, students read a text and annotate key words and phrases that strike them as important, surprising, unclear, and so on. After students have read and annotated the...

Resource Type: Curricula and Instruction, Teaching Strategies

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Informational Text Strategies: CERR
American Geosciences Institute (AGI)
The goal of this activity is for students to evaluate the specific claims in a scientific text. Individually, students read an article and annotate the text, identifying claims, evidence, reasoning, and rebuttals. Then, students work in groups, sharing their individual findings and coming to a...

Resource Type: Curricula and Instruction, Teaching Strategies

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Integrating Literacy Strategies into Science Instruction
American Museum of Natural History (AMNH)
With the adoption of the Common Core State Standards by several states, teachers across the academic disciplines have been called on to support students in attending to literacy tasks in their subjects in a more intensive way. Science teachers, trained to be content specialists, benefit from...

Resource Type: Curricula and Instruction, Teaching Strategies

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Climate Literacy and Energy Awareness Network (CLEAN)
The CLEAN Network is a professionally diverse community committed to improving climate and energy literacy locally, regionally, nationally, and globally, to enable responsible decisions and actions.

Resource Type: Classroom Activities, Curricula and Instruction
Grade Level: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12