

# 28.1 Using Energy in the Real World

Chemistry

Summarize main points from each video.

Video Title / topic \_\_\_\_\_

Video Title / topic \_\_\_\_\_

Video Title / topic \_\_\_\_\_

# Topic Introduction



**Summarize your understanding of each paragraph.**

Renewable energy sources include biomass, geothermal energy, hydropower, solar energy, and wind energy. They are called renewable energy sources because they are naturally replenished regularly. Day after day, the sun shines, the wind blows, and rivers flow. [www.eia.gov](http://www.eia.gov)

A non-renewable resource is a resource that does not renew itself at a sufficient rate for sustainable economic extraction in meaningful human time-frames. Example are carbon-based, organically-derived fuel such as coal, oil and natural gas. [en.wikipedia.org/wiki/Non-renewable\\_resource](http://en.wikipedia.org/wiki/Non-renewable_resource)

Natural resources such as coal, petroleum (crude oil) and natural gas take thousands of years to form naturally and cannot be replaced as fast as they are being consumed. Eventually it is considered that fossil-based resources will become too costly to harvest.

The use of nuclear technology relying on fission requires Naturally occurring radioactive material as fuel. Uranium, the most common fission fuel, and is present in the ground at relatively low concentrations and mined in 19 countries.

# Read/Summarize Text



1. Read the passage.
2. Underline key expressions in each sentence.
3. Re-write each word (or expression) you underlined.
4. Summarize the passage.

*Sustainable agriculture.*

The phrase sustainable agriculture was coined by Australian agricultural scientist Gordon McClymont. It has been defined as "an integrated system of plant and animal production practices having a site-specific application that will last over the long term".

Expansion of agricultural land reduces biodiversity and contributes to deforestation. The Food and Agriculture Organisation of the United Nations estimates that in coming decades, cropland will continue to be lost to industrial and urban development, along with reclamation of wetlands, and conversion of forest to cultivation, resulting in the loss of biodiversity and increased soil erosion.

[https://en.wikipedia.org/wiki/Renewable\\_resource](https://en.wikipedia.org/wiki/Renewable_resource)

*Re-write words you underlined*

\_\_\_\_\_

\_\_\_\_\_

*Using a complete sentence, summarize or rephrase the passage*

\_\_\_\_\_

# Read Text for Comprehension

Read this article for deeper understanding. No summary is required, although you may want to circle, underline, or mark key ideas and words.

---

## **Renewable resources**

Natural resources, known as renewable resources, are replaced by natural processes and forces persistent in the natural environment. There are intermittent and reoccurring renewables, and recyclable materials, which are utilized during a cycle across a certain amount of time, and can be harnessed for any number of cycles.

The production of goods and services by manufacturing products in economic systems creates many types of waste during production and after the consumer has made use of it. The material is then either incinerated, buried in a landfill or recycled for reuse. Recycling turns materials of value that would otherwise become waste into valuable resources again.

The natural environment, with soil, water, forests, plants and animals are all renewable resources, as long as they are adequately monitored, protected and conserved. Sustainable agriculture is the cultivation of plant and animal materials in a manner that preserves plant and animal ecosystems over the long term. The overfishing of the oceans is one example of where an industry practice or method can threaten an ecosystem, endanger species and possibly even determine whether or not a fishery is sustainable for use by humans. An unregulated industry practice or method can lead to a complete resource depletion.[20]

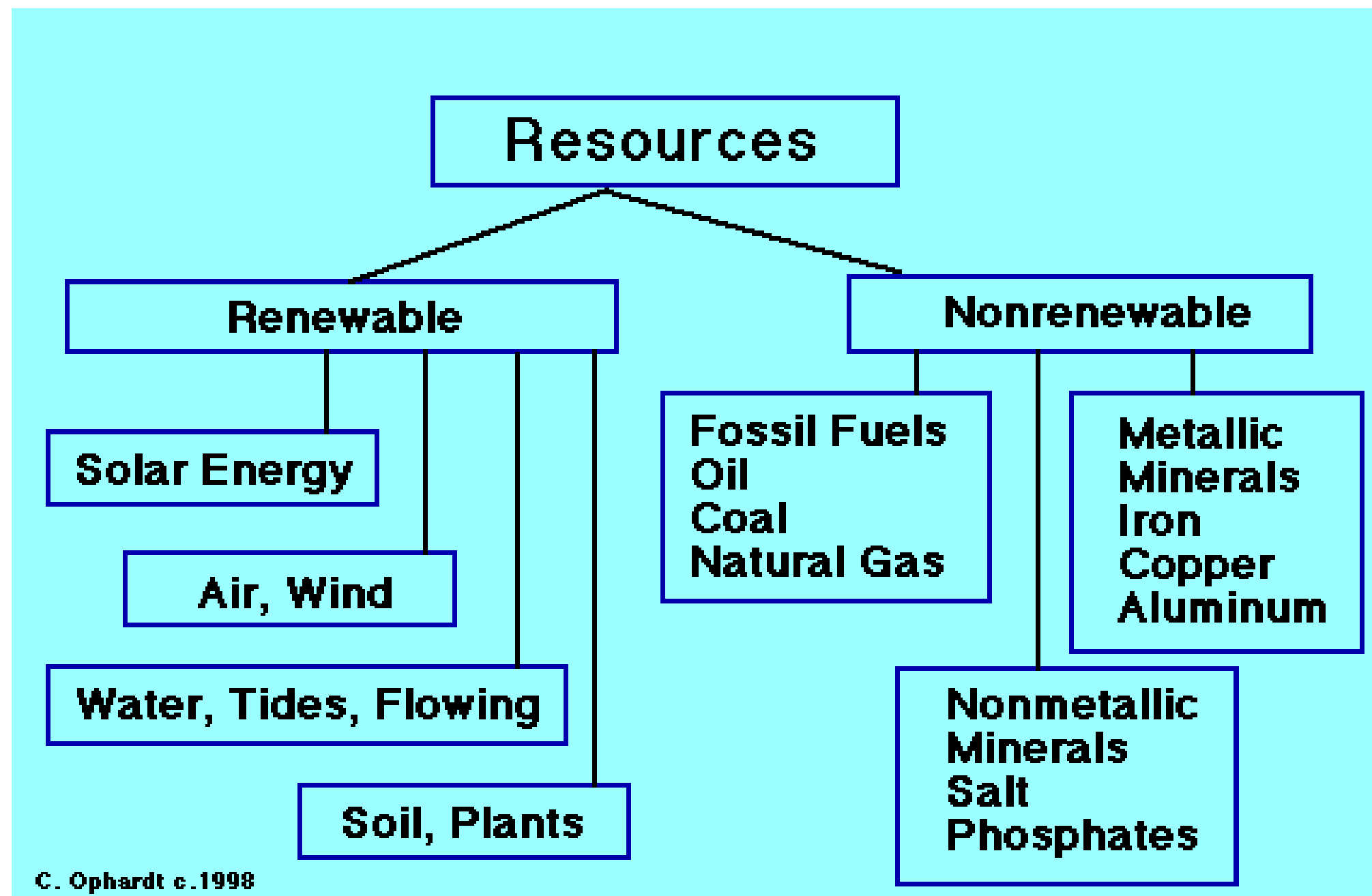
The renewable energy from the sun, wind, wave, biomass and geothermal energies are based on renewable resources. Renewable resources such as the movement of water (hydropower, tidal power and wave power), wind and radiant energy from geothermal heat (used for geothermal power) and solar energy (used for solar power) are practically infinite and cannot be depleted, unlike their non-renewable counterparts, which are likely to run out if not used sparingly.

The potential wave energy on coastlines can provide 1/5 of world demand. Hydroelectric power can supply 1/3 of our total energy global needs. Geothermal energy can provide 1.5 more times the energy we need. There is enough wind to power the planet 30 times over, wind power could power all of humanity's needs alone. Solar currently supplies only 0.1% of our world energy needs, but there is enough out there to power humanity's needs 4,000 times over, the entire global projected energy demand by 2050.

# Draw Illustration



Copy and Label the Illustration in the Space Provided



<https://fitz6.wordpress.com/>

Draw (Copy) the Illustration Here

# Interpret a Graph



Write the title of the graph \_\_\_\_\_

Circle the type of chart this represents

*Bar Chart   Line Chart   Pie Chart   Other*

If applicable,

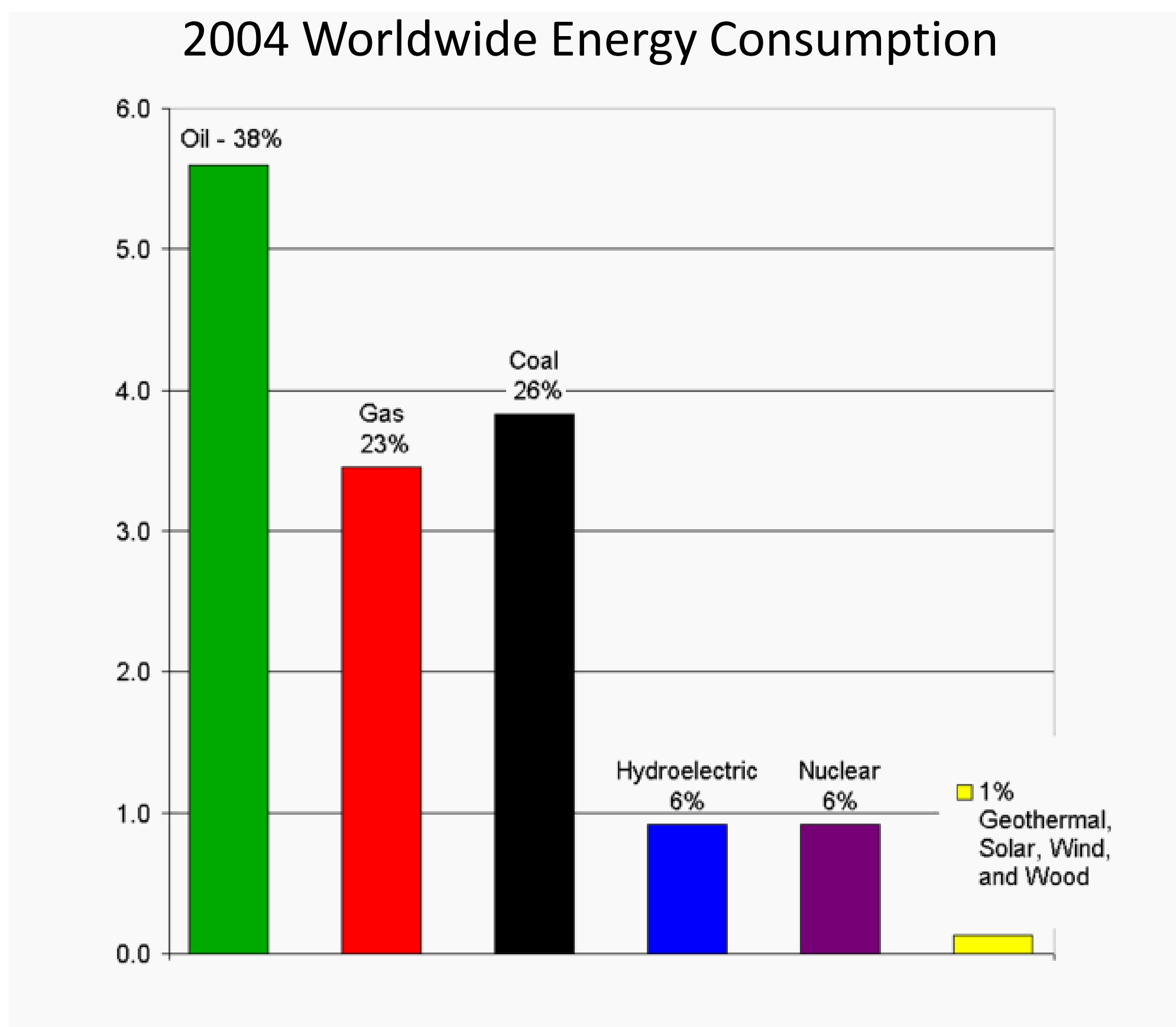
What does the X-axis represent \_\_\_\_\_

What does the Y-axis imply \_\_\_\_\_

Summarize what this graph represents or conveys

---

[https://commons.wikimedia.org/wiki/File:2004 Worldwide Energy Sources graph.png](https://commons.wikimedia.org/wiki/File:2004_Worldwide_Energy_Sources_graph.png)



# Show-Off Your Smarts!



## Instructions

- Complete as an individual or small group.
- Discuss your ideas/answers/responses in a small group.
- Select one person to present your responses to the class.

**Q1. How can this information be applied to a young-person's life?**

**Q2. How does this information apply to (or impact) communities?**

**Q3. When do scientists need to apply this information? How?**

**Q4. How would a person from 100 years ago view this information?**

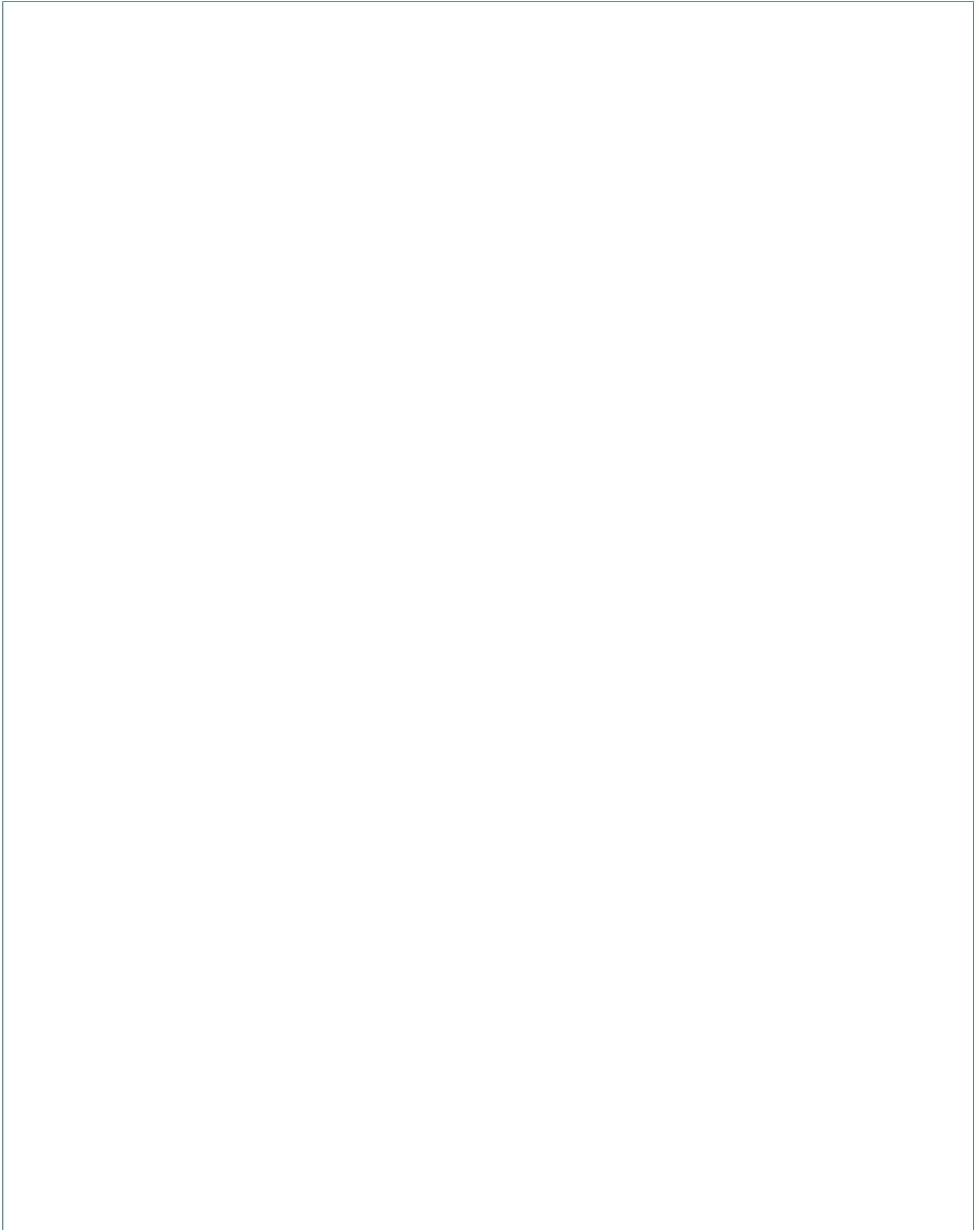
**Q5. How does this topic connect to other science topics or math?**

*Write down at least three words introduced or covered by this topic.*

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

# Make a Poster

In the space provided here, create/draw a poster which conveys the concepts you have learned on this topic.

A large, empty rectangular box with a thin blue border, intended for the student to create a poster. The box occupies most of the page below the instructions.