

## 2025-2026 Regional Finals Study Guide – Question Set 2

**Instructions:** This study guide should be your first step in preparing for the International Science Bee on the Question Set 2. Many of the facts below are found in the questions on the Question Set 2. Other facts in the study guide will be found in the other Question Sets being used this academic year. **However, the majority of questions in the tournament are not referenced in the study guide.** The study guide is meant to help you get started. It is not meant to be fully comprehensive as the essence of academic competition is not memorizing a list, but having wide-ranging knowledge.

As the questions are all short paragraphs on a particular topic, if a topic is found below, then it is a good idea to learn more about it (since additional facts about a topic will also be referenced in the question). It is also helpful to read the introduction of a Wikipedia page on a topic. Please also use our past question sets which are [found here](#). Many of the topics that are found in past years' questions will come up this year too.

Good luck!

Note: This academic year, the study guides are slightly shorter than in past years, but we are also including a list of additional terms at the end. These are also likely to be referenced at some point in the tournament, but you will need to do some research to learn about the significance of each of these.

### Biology & Anatomy

1. [COVID-19 vaccines](#) were developed by Pfizer and Moderna to respond to the [COVID-19 pandemic](#).
2. [Pollen](#) is a yellow powder produced by plants that is responsible for many allergies.
3. [Paleontology](#) studies ancient life through the analysis of [fossils](#).
4. [Influenza](#) is a disease caused by viruses. The worst influenza pandemic took place in 1918-1920 and may have killed 25-50 million people.
5. [Proteins](#) are essential biological molecules that are found in foods like eggs and meat.
6. [Chromosomes](#) are threadlike bodies found in the [nucleus](#) that contain [genes](#).
7. [Predators](#) are animals that hunt and consume other animals for food.
8. [Vitamin A](#) is found in carrots and promotes [retina](#) development and eye health.

### Astronomy

1. [Mars](#) is the orange/red-colored fourth planet from the sun.
2. [Gamma rays](#) are powerful electromagnetic radiation, named for the third letter of the Greek alphabet.
3. The [Big Bang](#) theory proposes that the universe was created by sudden expansion.
4. [Gemini](#) is the constellation that contains the stars Castor and Pollux, named for mythological twins.

### Chemistry

1. [Hydrogen](#) has the chemical symbol H and is the lightest element on the periodic table.
2. [Zinc](#) is a metal with chemical symbol Zn that combines with [copper](#) to form [brass](#).
3. [Silicon](#) is a [metalloid](#) element that names a valley in California known for its computer industry.

4. [Nitrogen](#) is the gas that makes up the majority of air, at approximately 78 percent.
5. [Iron](#) is a metallic element that combines with carbon to make the alloy [steel](#).

### Engineering

1. A battle of electrical standards culminated in the [War of the Currents](#), which involved [Thomas Edison](#), [George Westinghouse](#), and [Nikola Tesla](#).
2. [Concrete](#) is a building material used to create structures like bridges and skyscrapers.

### Earth Science

1. [Lightning](#) is an electrical discharge that occurs during thunderstorms.
2. [Fronts](#) are boundaries that separate air masses with differing characteristics.
3. [Glaciers](#) are large moving bodies of ice that contain the majority of the Earth's fresh water.
4. An [axis](#) is an imaginary line that defines the rotation of a planet.
5. [Floods](#) are events where water overflows onto land that is generally dry.
6. [Diamonds](#) are forms of carbon that are the hardest materials found in nature.
7. [Fog](#) is a weather condition consisting of water droplets suspended near the Earth's surface.
8. [Lava](#) is molten rock released to the Earth's surface during a [volcanic eruption](#).
9. [Temperature](#) is a measure of the average [kinetic energy](#) of a substance's particles.

### Math

1. [Pi](#) is a [transcendental number](#) equal to approximately 3.14159.
2. The [perimeter](#) of a shape is equal to the sum of the length of its edges.
3. [Geometry](#) is the field of mathematics that studies the properties of shapes and space.

### Physics

1. [CERN](#) is an intergovernmental organization that operates the European [Large Hadron Collider](#).
2. [Albert Einstein](#) showed that energy is the product of [mass](#) and the square of the [speed of light](#).
3. [Magnetic fields](#) are [vector](#) fields showing the strength of magnetism and are measured in Tesla units.
4. [Electrons](#) are negatively-charged particles that orbit the [atomic nucleus](#).

## Terms for Further Study

1. [Stalactite](#)
2. [Acceleration](#)
3. [Chloroplast](#)
4. [Rats](#)
5. [Alveoli](#)
6. [Triassic period](#)
7. [Mad cow disease](#)
8. [Uranium](#)
9. [Python](#)
10. [Alexander Graham Bell](#)
11. [Hooke's law](#)
12. [Jonas Salk](#)
13. [Gottfried Leibniz](#)
14. [Carbon-14](#)
15. [Ceres](#)
16. [Microprocessor](#)
17. [Brute force attacks](#)
18. [Laika](#)
19. [Venus](#)
20. [Liquid crystal displays](#)
21. [Genetics](#)
22. [Bragg's law](#)
23. [Fault](#)
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