



National Science Bee

2026-2027 Regional Finals Study Guide – Red Question Set

Instructions: This study guide should be your first step in preparing for the [National Science Bee Regional Tournaments](#) on the Red Question Set. Many of the facts below are found in the 120 questions on the Red Question Set. 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. [Rabies](#), also known as hydrophobia, is a fatal disease spread by animal bites that causes frothing at the mouth.
2. The [Tyrannosaurus rex](#) was the largest bipedal predator in North America during the Late [Cretaceous](#) period.
3. The [heart](#) is an organ in the circulatory system that is responsible for pumping [blood](#) throughout the body.
4. [Salmonella](#) and [e. coli](#) are two examples of the one-celled organisms known as [bacteria](#).
5. The [small intestine](#) is the organ of the digestive system that attaches the [stomach](#) to the [colon](#).
6. [Marsupials](#) are a subset of [mammals](#) that carry their young in pouches.
7. The [skeleton](#) of the human body consists of 206 bones.
8. The [Jurassic](#) period, when [dinosaurs](#) were the dominant life form, is the middle part of the [Mesozoic](#) era.

Astronomy

1. [Jupiter](#) is the largest planet in the Solar System. Its moon [Europa](#) is considered a candidate for harboring extraterrestrial life.
2. [Halley's comet](#), last visible from Earth in 1986, is a comet with an orbital period of approximately 75 years.
3. The [speed of light](#) measures how fast light travels in a vacuum, which is equal to approximately 299,492,458 meters per second.
4. A [supernova](#) is a powerful explosion of a star. They can be, but are not always, caused by [fusion](#) runaway in [white dwarf](#) stars.

Chemistry

1. [Gold](#)'s high malleability and resistance to corrosion makes it high in demand for currency and jewelry.
2. [Density](#), symbolized by the Greek letter rho, is the ratio of mass to volume in any substance.
3. A [Bunsen burner](#) is a laboratory device that uses [natural gas](#) to create controlled flames.
4. The [periodic table](#) arranges the chemical elements into categories such as [halogens](#), metals, and nonmetals. It was first designed by [Dmitri Mendeleev](#).
5. [Carbon](#) is an element with atomic number 6 and symbol C that forms the basis for [organic chemistry](#).

Computer Science

1. [Pixels](#) are the smallest, square-shaped elements in a [raster](#) computer image.

2. [Artificial intelligence](#) is a field of computer science allowing machines to perform tasks associated with human intelligence.

Earth Science

1. [Cumulonimbus](#) clouds are tall clouds that can cause severe [thunderstorms](#) and [tornadoes](#).
2. [Jet streams](#) are fast-moving air currents that planes often exploit to reduce flight time on long flights.
3. A [diamond](#) is an [allotropic](#) form of carbon that is the hardest naturally-occurring mineral.
4. [Tsunamis](#) are tidal waves that are generated by displacement of water from a seismic event.
5. An [archipelago](#) is a chain or cluster of islands. Examples of them include the [Hawaiian](#) and [Galapagos Islands](#).
6. An [earthquake](#) is commonly caused by the movement of tectonic plates.
7. [Snow](#) is a solid form of precipitation that falls from the sky as soft crystals of ice.
8. [Volcanoes](#) are fissures in the surface of a planet that allow ash and [lava](#) to escape to the surface.
9. The flatness of a plant [leaf](#) aids in its ability to absorb as much sunlight energy as possible.

Math

1. An [algorithm](#) is a step-by-step procedure that is guaranteed to solve a given problem.
2. A [triangle](#) is a three-sided geometric figure that comes in equilateral, isosceles and scalene varieties.
3. [Pi](#) is a [transcendental number](#) equal to approximately 3.14, integral to the formula for calculating the area of a [circle](#).

Physics

1. [Radioactivity](#) is the process by which the unstable [nucleus](#) of an atom releases energy.
2. [Friction](#) is the force resisting the motion between two surfaces in contact.
3. A [magnet](#) is any object that produces a [magnetic field](#), which creates an attractive or repulsive force.
4. [Acceleration](#) is the rate of change of an object's [velocity](#).

Terms for Further Study

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|-----------------------------------|-------------------------------------|---------------------------------------|
| 1. DNA | 11. Henri Becquerel | 21. Andromeda galaxy |
| 2. Phloem | 12. Petroleum | 22. Ozone layer |
| 3. Trophic levels | 13. Oort cloud | 23. Catalyst |
| 4. Nebula | 14. Obsidian | 24. Ribosome |
| 5. Simple machine | 15. Prion | 25. Convection |
| 6. Square root | 16. Pterodactyl | 26. Moons of Jupiter |
| 7. Enigma machine | 17. Roots | 27. Relativity |
| 8. Ellipse | 18. Proton | 28. Boiling |
| 9. Cancer | 19. Punnett square | 29. White blood cells |
| 10. Force | 20. Mass | 30. Trilobite |