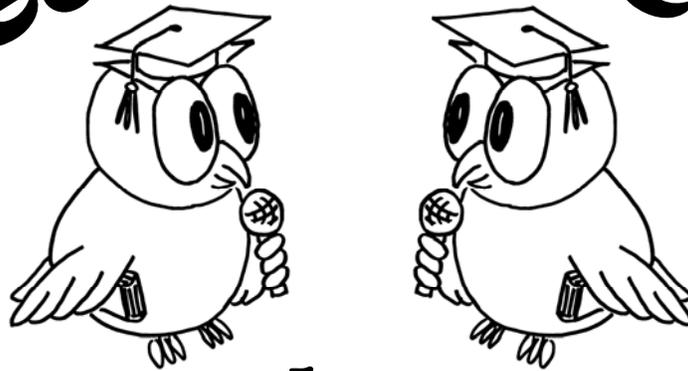


**Head to Head**



**Let's Go!**

**Coach's Guide**

**Science**

## Personal Note to Coaches:

Thank you for your time and energy. Both are scarce, and you are very much appreciated. The *Head to Head* program is a chance for every young person to shine in his or her area of interest. It opens up whole new arenas for competition and success for ALL kids. Whether it's on the field, on the court, on the stage, on the easel, or in the classroom, it is vitally important to encourage the pursuit of excellence...but you already knew that, didn't you? I welcome feedback on any aspect of this program.

**[feedback@HeadtoHeadTesting.com](mailto:feedback@HeadtoHeadTesting.com)**

*Thanks Again!*

## Event Coach:

- Coaches may coach more than one event and/or more than one act per performance event.
- Familiarize yourself with the Coach's Guide for your event(s).
- Emphasize courtesy and good sportsmanship.
- Schedule practice sessions.
- Make copies of the Student Study Guide, Practice Test, and/or Judge's Evaluation form.
- Insure that team members have appropriate study materials, music, manuscripts, etc.
- Insure that team members understand all rules pertaining to their event.
- Work with your coordinator to establish which team members compete at which meet and in what order the performers will compete.
- Vocal performance event coaches - if your student is using a recorded instrumental track:
  - ◊ one copy of the CD must be given to your coordinator before each meet
  - ◊ be aware of the file format used on the CD (compatibility varies)
  - ◊ clearly label the CD with performer's name, song title, and track number
- Performance event coaches - be aware of performance minimum and maximum time limits.
- Performance event coaches - your act may notify the timekeeper if they do NOT want time signs to be displayed.
- Performance event coaches - be aware of how many and what type of microphones are available at the host school. (Ask your coordinator.)
- Performance event coaches - you are responsible for props. Bring your own or communicate your needs with your host school BEFORE the meet.

## Rules for the Written Testing Events:

- 1-6 students per team for each event
- Top score for each team - for each event - applies to team point total
- Students may not talk or ask questions during the test.
- If a student needs a new pencil, he or she should raise a hand, and a new pencil will be provided.
- Students MAY use scratch paper. (no calculators)
- If a student is caught cheating, his/her school will receive 0 points for that test regardless of which student is that school's high scorer.

# Science Topics Covered

Encourage your team members to study these areas:

- Life Science
  - ◆ Biology
  - ◆ Anatomy
  - ◆ Physiology
  - ◆ Botany
  - ◆ Zoology
  - ◆ Classifications of life
- Earth Science
  - ◆ Geology
  - ◆ Astronomy
  - ◆ Meteorology
  - ◆ Oceanography
- Chemistry
- Physics
- Electricity
- Sound and light
- Simple machines
- Terms and definitions
- Miscellaneous

## Sample Questions:

The asteroid belt falls between these two planets.

- A. Mars and Jupiter
- B. Mercury and Venus
- C. Earth and Mars
- D. Jupiter and Saturn

Perspiration, or sweat, comes from:

- A. Nerves
- B. Organs
- C. Glands
- D. Tendons

The mass of an electron is:

- A. Much smaller than the mass of a proton or a neutron
- B. Larger than the mass of a proton
- C. Equal to the mass of a neutron
- D. Larger than the mass of the nucleus

The next page is a study guide that can be copied for all of your team members.

*Good Luck!*

# Science Study Guide

*Congratulations for taking the science challenge!*

You should brush up your skills on these topics:

- **Life Sciences**
  - Understand different forms of life: plant and animal
  - What makes them similar? What makes them different?
  - Study anatomy (structures), physiology (physiology), genetics & more!
- **Earth Sciences**
  - What do geologists study?
  - What is astronomy?
  - What is meteorology?
- **Chemistry**
  - Understand atoms, molecules, elements, compounds and molecular particles.
  - How do they come together and make different substances?
  - Be able to identify some common chemical symbols.
- **Physics**
  - What exactly is physics?
  - How do scientists study matter and motion?
  - What are the basic laws?
- **Electricity**
  - Review the basic concepts.
- **Simple Machines**
  - Remember what you learned in elementary school and be able to take it to the next level.
- **Sound and Light**
  - How do waves behave?
  - What are the terms and definitions that describe wave behavior?
- **Miscellaneous Scientific Knowledge**
  - There could be a few more questions on topics not mentioned above!