

Tested Topics

Four subjects will be covered, including earth science, biology, chemistry, and physics. Most concepts tested will be approximately at the middle school level. However, teams are provided higher level articles, equations, or excerpts that they will have to utilize to solve some challenge questions. These higher level questions will be at a high school level, and the background required to solve those questions will be provided within the question itself. For now, please have a look at some sample topics for each of the four subjects. We strongly encourage all teams to look at these topics, especially those teams which may be in 5th, 6th, or 7th grade, and haven't been introduced to them yet in school.

Earth Science

Earth: <ul style="list-style-type: none"> • General Info • Carbon Dating • Fossilization 	Water Cycle: <ul style="list-style-type: none"> • Steps of the water • Clouds 	Geology: <ul style="list-style-type: none"> • Types of Rocks • Effect of Volcanic Eruptions • Crystal Formations • Erosion, Weathering
Atmospheric Layers: <ul style="list-style-type: none"> • Space Exploration • Types of waves in the air • Gases at different layers 	Astronomy: <ul style="list-style-type: none"> • Constellations/Stars • Planetary Bodies • Navigation • Lunar Phases 	Plate Tectonics: <ul style="list-style-type: none"> • Fault Lines • Pangaea • Continental Drift • Boundaries

Biology

Basic Cell Biology: <ul style="list-style-type: none"> • All Major Organelles 	Genetics: <ul style="list-style-type: none"> • DNA & Chromosomes • Punnet Squares • Mitosis/Meiosis 	Basic Anatomy: <ul style="list-style-type: none"> • Organs • Body Systems • Body Structures
Ecology: <ul style="list-style-type: none"> • Relationships • Taxonomy • Biomes and 	Well Known Scientists <ul style="list-style-type: none"> • Creators of important theories/concepts 	Cycles <ul style="list-style-type: none"> • Water, Carbon, Nitrogen Cycles

Ecosystems <ul style="list-style-type: none"> • Botany 		
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Chemistry

Matter: <ul style="list-style-type: none"> • Changes of state • Mixtures 	Atoms: <ul style="list-style-type: none"> • Bohr Model • Structure 	Physical and Chemical Changes: <ul style="list-style-type: none"> • Effect on matter
Lab Tools <ul style="list-style-type: none"> • Common tools • Applications 	Periodic Table <ul style="list-style-type: none"> • Reading the table • Differences in elements 	Elements vs Compounds <ul style="list-style-type: none"> • Differences • Balancing equations

Physics

Motion: <ul style="list-style-type: none"> • Associated units • Forces, including friction • Motion on inclined plane • Motion of projectiles • Circular motion Equation • Simple harmonic motion • Pythagorean Theorem 	Electricity: <ul style="list-style-type: none"> • Direct current (DC) circuits (series only) • Associated units • Series configurations of resistors
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