Achievable

ACT DUMP SHEET

Science

Optional: 40 questions in 40 minutes, no calculator

40 questions (34 scored) in **40 minutes: 1 minute a question.** Not in the Composite: it joins Math in the **STEM score.** Usually **6 or 7 passages** of 5—7 questions, about 6 minutes each, from biology, chemistry, Earth and space science, and physics. It tests reasoning with data far more than science facts.

Three passage types

Type	Share	What it is	How to work it
Data representation	26—32%	Graphs and tables, with little text; many answers read straight off a figure	Read the **axes**, the **legend or key** and the **table headings** first; the introduction can often be skipped
Research summaries	50—56%	One or more experiments: their **design** and their **results**	The scientific method: **hypothesis**, **independent variable** (changed; *x*-axis), **dependent variable** (responds; *y*-axis), **control group** (the baseline), **conclusion**. Look back to tie each step of the setup to the results
Conflicting viewpoints	18—21%	One passage: two or more explanations of one phenomenon (Student 1, Scientist 2, Hypothesis 3); the most reading	Skim the questions in **under 45 s**, boxing each "Student #"; read one view and answer its questions, then the next, then the comparisons. Note each view's claims in a **table**

Strategies for every passage

- **Go straight to the questions:** they lead you through the passage
- An **italicized term** is defined beside it in the passage, or in the question itself
- **Read the axes** of a graph, the row and column labels of a table, and any **asterisk** note below a figure
- **Use every number** the question gives; an unused one means a missed step
- **"Cannot be determined"** is sometimes right
- **Stuck?** The choices show what the answer should look like

Annotate the question, not the passage

- **Location:** where to look ("according to Figure 2")
- **Variables:** the quantities asked about, and any numbers
- **Keywords:** the chemicals, planets or species that matter
- Write them **beside long questions** (4 or more lines), and check for **NOT**

The problem-solving process

- The same seven steps for every question:
  - 1 Read and annotate the question
  - 2 What location does it give?
  - 3 What does it want you to find?
  - 4 Look for the answer; not there? go on
  - 5 Read the choices for what to find
  - 6 Cross out wrong choices; mark likely ones
  - 7 Make your best **educated guess**
- **Inference** and **prior knowledge** questions live in steps 4—7: never a blind guess

Figure and trend questions

- **Use the right figure:** the one named, or the one sharing the question's theme (volume → the volume graph)
- **Spotlight** only the part of the figure you need
- **Several figures:** use every one named; find a value in one, carry it to the next
- **Trends:** compare **two columns** of a table; read a line **left to right**
- **Predict past the data:** extend the line, or repeat the last change (300 → 400 km: 47 → 62 s, so 500 km ≈ 62 + 15 = 77 s)

Coupled answers and new claims

- **Coupled answers:** two parts, each used twice across the four choices
- Prove or disprove **one part** first: two choices go at once; then find what splits the last two
- **New claim** (common in conflicting viewpoints): restate it in your own words
- Then ask which viewpoints **agree, disagree**, or are **supported or disproved**; check your table

Prior knowledge: rare, and studied last

- Topics that recur:
  - **pH:** 7 neutral, below 7 acidic
  - **Density:** usually solid > liquid > gas; ice floats
  - **Photosynthesis:** CO_2 + water + light → O_2 + sugar
  - **Planets:** Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune
  - **Charges:** opposites attract
  - **Phases:** melting and boiling points
  - **Taxonomy:** domain, kingdom, phylum, class, order, family, genus, species
  - **Energy:** kinetic (motion), potential (stored)