

Name _____

Orbital Transfer Answer Key

1. Non-essential details may include specific wording such as exact phrasing about temporary orbit, mentions of small errors, or extended explanations of calculations.
2. Essential ideas include: satellites need precise speed and direction to stay in orbit, transfer maneuvers shift satellites into higher stable orbits, and accurate timing and fuel efficiency are critical.
3. Sample summary: Satellites must reach precise speeds and directions to remain in orbit around Earth. Engineers use transfer maneuvers to move satellites from lower orbits into stable higher orbits using carefully calculated engine burns. Efficient maneuvers reduce fuel use and extend satellite operation.

Teacher's Guide

- This worksheet strengthens students ability to identify **essential scientific information** and remove unnecessary details.
- For differentiation, provide sentence frames such as The main purpose of this process is and Engineers must carefully manage.
- For engagement, show a short animation of satellite orbit transfers before students begin summarizing.
- For extension, have students write an even shorter **one sentence micro summary** using no more than twenty words.
- For advanced learners, challenge students to compare their summary to the original and justify every sentence choice.
- For struggling readers, guide them to underline only verbs and technical terms before building the summary.