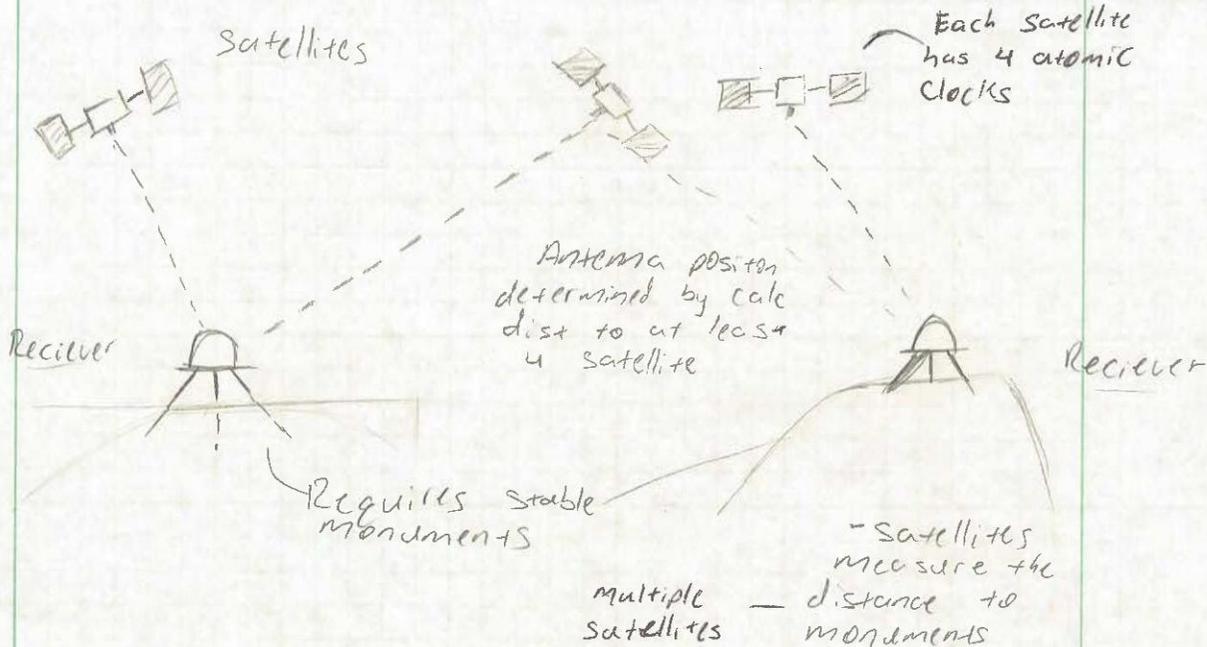


Rubric

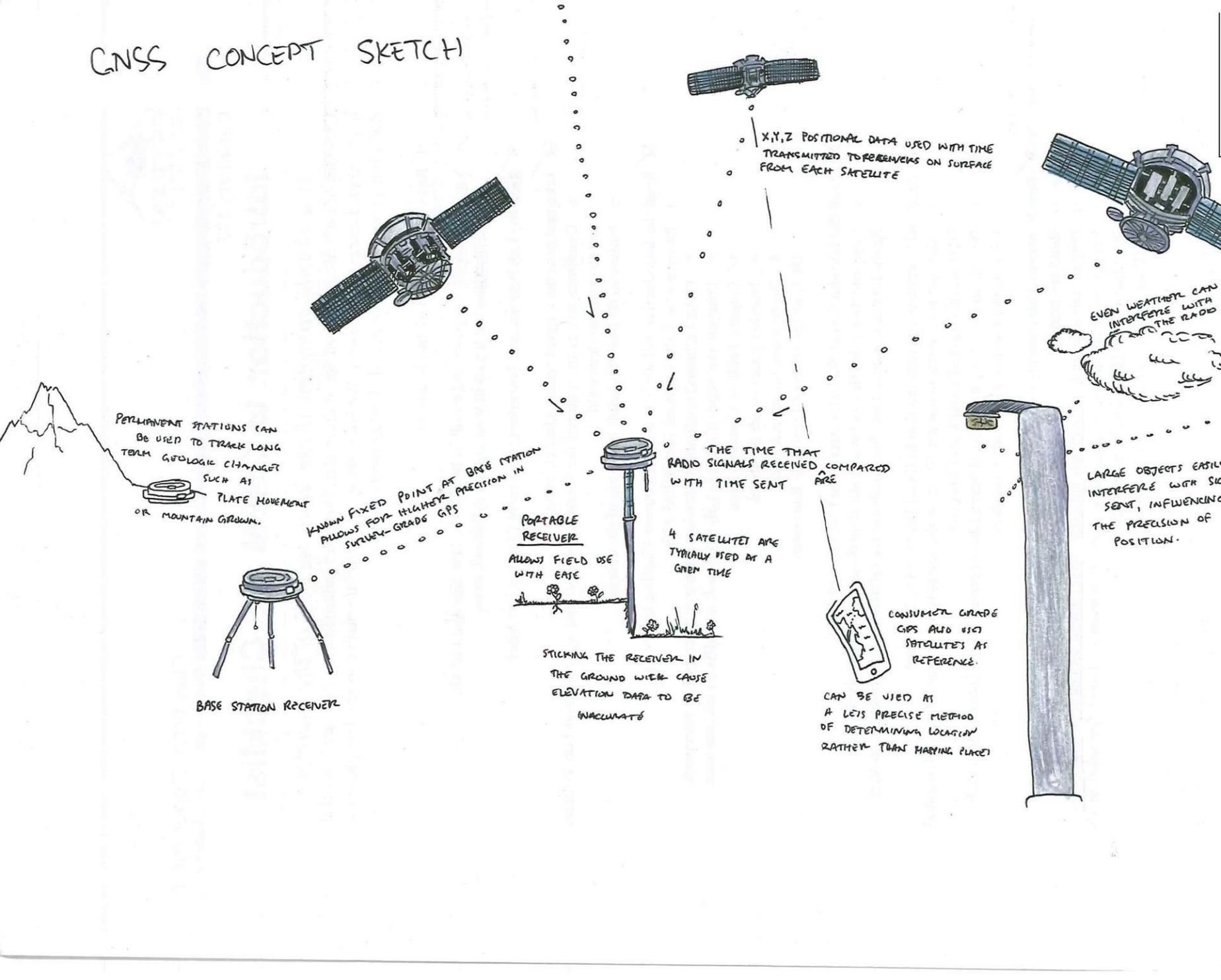
Component	Exemplary	Basic	Nonperformance
General Considerations	Exemplary work will not just include all components requested above but also answer correctly, completely, and thoughtfully. Attention to detail—as well as answers that are logical and make sense—is an important piece of this. Sketch is neat, organized, and readable.	Basic work may answer all components of the given question, but some answers are incorrect, ill-considered, or difficult to interpret given the context of the question. Basic work may also be missing components of a given question.	Nonperformance occurs when students are missing large portions of the assignment or when the answers simply do not make sense and are incorrect.
Concept Sketch	<p>9–10 points:</p> <p>Sketch includes all parts of the GNSS station including antenna, receiver, tripod, and radio or external batteries (as discussed in the demo)</p> <p>Sketches includes concise descriptions of each component and its function</p> <p>Sketch includes directional elements (arrows) showing data communication paths from satellite to receiver</p> <p>Sketch includes at least one source of error, such as multipath</p> <p>Good articulation of GNSS applications to science and society.</p>	<p>5–8 points:</p> <p>Missing 1–2 of the listed characteristics for an exemplary sketch.</p> <p>AND/OR</p> <p>All characteristics are present but lack detail or are incorrect, showing a lack of comprehension</p>	<p>0–4 points:</p> <p>Missing 2–4 of the sketch components.</p> <p>AND/OR</p> <p>Most characteristics are present (1–2 missing) but are incorrect, showing a lack of comprehension</p>

*For more on concept sketches, see the References and Resources section of the Unit 1 GETSI website or see student examples from testing under Assessments: Student Examples in the appropriate unit.

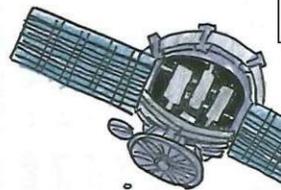
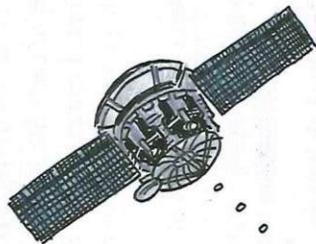
GNSS System



GNSS CONCEPT SKETCH



X, Y, Z POSITIONAL DATA USED WITH TIME TRANSMITTED TO RECEIVERS ON SURFACE FROM EACH SATELLITE



EVEN WEATHER CAN INTERFERE WITH THE RADIO

LARGE OBJECTS EASILY INTERFERE WITH SIGNALS SENT, INFLUENCING THE PRECISION OF POSITION.



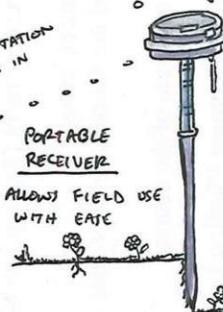
PERMANENT STATIONS CAN BE USED TO TRACK LONG TERM GEOLOGIC CHANGES SUCH AS PLATE MOVEMENT OR MOUNTAIN GROWTH.

KNOWN FIXED POINT AT BASE STATION ALLOWS FOR HIGHER PRECISION IN SURVEY-GRADE GPS



BASE STATION RECEIVER

PORTABLE RECEIVER
ALLOWS FIELD USE WITH EASE



STICKING THE RECEIVER IN THE GROUND WITH CAUSE ELEVATION DATA TO BE INACCURATE

THE TIME THAT RADIO SIGNALS RECEIVED COMPARED WITH TIME SENT ARE

4 SATELLITES ARE TYPICALLY USED AT A GIVEN TIME



CONSUMER GRADE GPS ALSO USES SATELLITES AS REFERENCE.

CAN BE USED AS A LESS PRECISE METHOD OF DETERMINING LOCATION RATHER THAN HAVING A FIXED REFERENCE POINT