



Module 3 Sensor Development – Designing for Need

Student Worksheet

Assessment

1) Deconstruct the SENSE IT Temperature Sensor Design Process

a) Review the steps of the design process outlined in the lesson.

b) Brainstorm several of the criteria you think were considered while the SENSE IT project staff moved through the first three steps of the design process to create the temperature sensor you built as part of the SENSE IT project:

- *Defining the problem*
- *Brainstorming, Researching and Generating Ideas*
- *Identifying Criteria and Specifying Constraints*

For example:

Why measure water temperature?

What temperature ranges would be necessary to measure?

Could the design solution be expensive to build?

c) List the questions/criteria.

d) Discuss with entire class to create a full list of criteria.

Assessment Extension

1) The SENSE IT project includes the design instructions for three additional sensors:

- Turbidity
- Conductivity
- Depth

For each of the sensors, repeat the steps above (your teacher may choose to split your class and have one group focus on one sensor and share the results):

Deconstruct the SENSE IT Sensor Design Process

a) Review the steps of the design process outlined above.

b) Brainstorm several of the criteria you think were considered while the SENSE IT project staff moved through the first three steps of the design process to create the sensors you built as part of the SENSE IT project:

- *Defining the problem*
- *Brainstorming, Researching and Generating Ideas*
- *Identifying Criteria and Specifying Constraints*

c) List the questions/criteria below.

d) Discuss with entire class to create a full list of criteria.

2) Based on the research conducted to answer the questions above or as part of your course, is there a need to measure additional water quality parameters? If so, which parameters and why?