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| **Design Process Example Worksheet** |

Note that the design process is a guideline for thinking about design. You do not need to address every bullet point at each step for every project. Complete the steps that make sense given the overall need and requirements of the final project.

1. **Define Problem**

* A group of newly diagnosed diabetics need a 3-D visual model that demonstrates the function of insulin in the body. Design, build, and use this model to show the relationship between insulin and glucose in regulating sugar levels in the body and to show the difference between Type 1 and Type 2 diabetes.
* Design requirements for the model are listed below:
  + - * The model must be constructed of materials easily accessible at home or school.
      * The model must be 3-D with moveable parts.
      * The model should be labeled clearly.
      * The materials must be approved by the teacher.
      * The model must accurately show the role of insulin as it relates to glucose in the body.
      * The model must accurately depict the role of the following terms in blood sugar regulation:
        + Glucose transport proteins
        + Cell membrane
        + Glucose
        + Blood
        + Cell
        + Insulin
        + Insulin receptors
* NOTE: In this case, a full design brief is not necessary.

1. **Investigate, Research, and Generate Ideas**

This project does not require research on past solutions. Focus on investigating the science behind the model as well as generating ideas for the design of the model. You may already have notes about the science behind the model in your laboratory journal.

1. **Develop a Solution**

Construct your model.

1. **Construct and Test a Prototype**

NOTE: In this case, test to see if your model works. There is no data to analyze.

1. **Evaluate the Solution**

NOTE: Evaluate whether your model can be used to accomplish the overall goal. Return to prior design steps and redesign if results are unsatisfactory.

1. **Present the Solution**

NOTE: In this case, design a short informal presentation to showcase your model.