Situation:
You are a part of a team of engineers that need to create a device to rescue a puppy trapped in a sewer approximately 1m deep. Rescue teams have instructed that you will only have 3 min. to use your device to save the puppy.

Notes:

Questions for the client:

Define the problem:
What is the problem? Why is it a problem? Think about this individually first and then agree upon one definition as a team.

Specification Chart – A list of all specifications or requirements that need to be met for a successful design/solution with justification and relative weighted importance.

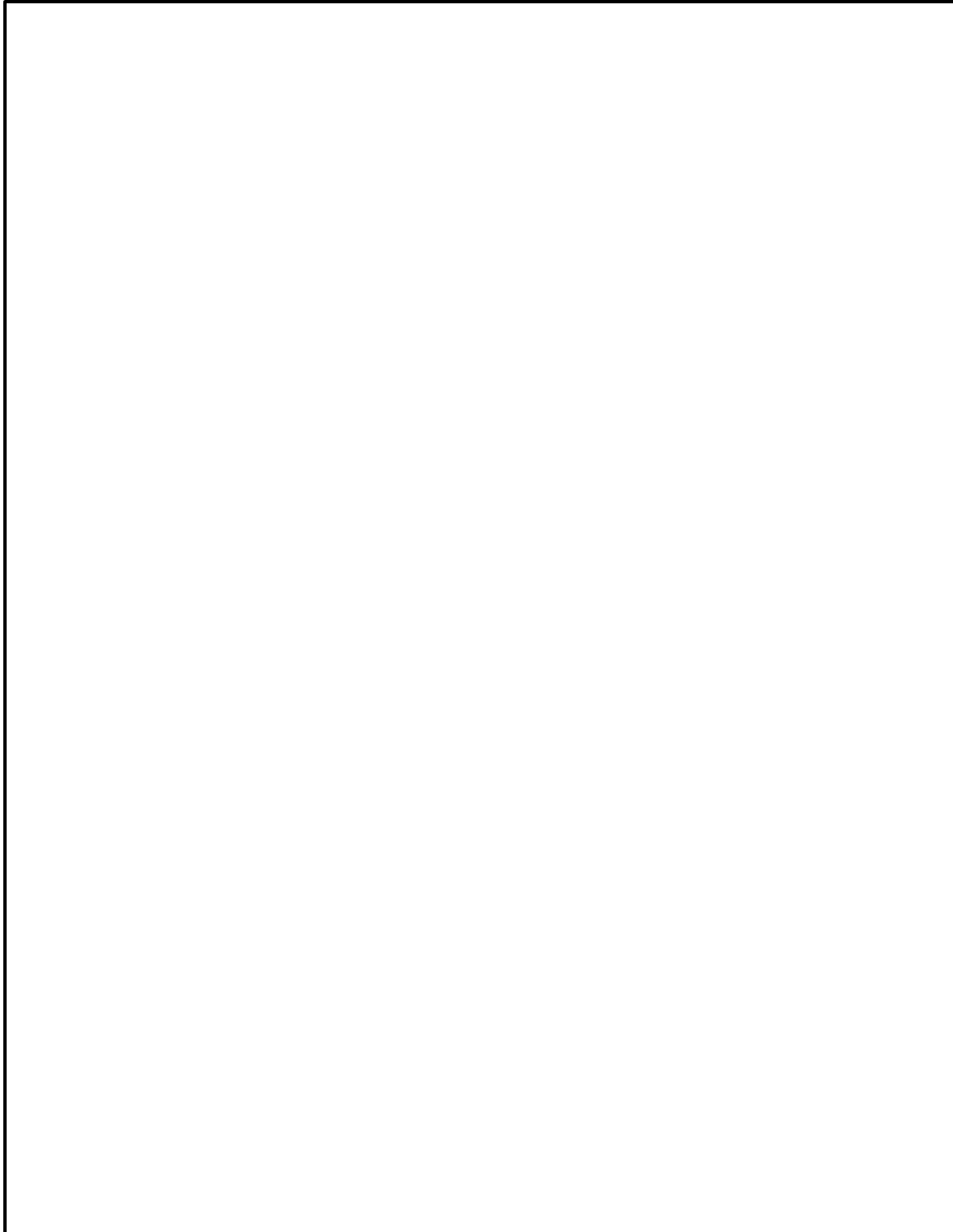| Specification | Weight Scale:_____ | Justification |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

Background Research

Things to think about:

- What kinds of materials and resources do you have?
- What are the measurements (distances, weights, etc.) of key elements of the problem?
- What are the limiting factors of the problem?

How would you do this yourself (without the limitations)? How can you relate that to what you have to work with?

## Brainstorming

1) Draw your idea in the box. Label the materials you use. Do this individually first before you share with the group.

2) Write down the detailed step-by-step process to your solution. This is the process to actually carry out the solution/how to use your prototype (not the process to create your prototype). Do this individually first before you share with the group.

| Pugh Chart | Scale: | Solution A | | Solution B | |
|---|---|---|---|---|---|
| Specification | Weight | Score | Weighted Score | Score | Weighted Score |
| Example | w1 | a | w1 x a | b | w1 x b |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Totals | | | | | |

<u>Test and Improve</u>

1) Were you able to save the puppy with your prototype? (Did it work?)

2) What parts worked well? Why do you think that is?

3) What parts did not work so well? Why do you think that happened?

4) How would you change your prototype/process to improve its performance?

## Gantt Chart

| Task | Person/Group | Amount of time | 9:00 AM | 9:30 AM | 10:00 AM | 10:30 AM | 11:00 AM | 11:30 AM | 12:00 PM | 12:30 PM | 1:00 PM |
|------|-------------|----------------|---------|---------|----------|----------|----------|----------|----------|----------|---------|
|      |             |                |         |         |          |          |          |          |          |          |         |
|      |             |                |         |         |          |          |          |          |          |          |         |
|      |             |                |         |         |          |          |          |          |          |          |         |
|      |             |                |         |         |          |          |          |          |          |          |         |
|      |             |                |         |         |          |          |          |          |          |          |         |
|      |             |                |         |         |          |          |          |          |          |          |         |
|      |             |                |         |         |          |          |          |          |          |          |         |
|      |             |                |         |         |          |          |          |          |          |          |         |
|      |             |                |         |         |          |          |          |          |          |          |         |
|      |             |                |         |         |          |          |          |          |          |          |         |