Name:	
Date:	*Period:*

ENGINEERING DESIGN PROCESS

Directions

In the table below, write or draw a picture explaining how Kai‘ulani and Kekahu completed each step of the engineering design process to create their parachute.

Steps of the Engineering Design Process	How did the siblings complete this step?
ASK	
IMAGINE	
PLAN	
CREATE	
IMPROVE	

Claim, Evidence, Reason

Directions

Write your initial Claim, Evidence, Reasoning (CER) statement on what *you hypothesize* will be the best parachute for Kai‘ulani and Kekahu:

Parachute Testing Stations

Directions

You do not have to go to the stations in order, but you need to go to each station. Fill out the following tables for each station and record your findings.

For every station, drop height (3 m) and suspension load (large binder clip) are control variables and should be listed with the others you identify.

Station 1: Canopy Size			
Control Variables (list all of them)			
Dependent Variable			
Independent Variable			
Hypothesis			
	Test 1	**Test 2**	**Test 3**
Independent Variable Change You Made			
Trial 1: Dependent Measure and Observations			
Trial 2: Dependent Measure and Observations			
Trial 3: Dependent Measure and Observations			
Average			
Was your hypothesis correct?			

Station 2: Canopy Material			
Control Variables (list all of them)			
Dependent Variable			
Independent Variable			
Hypothesis			
	Test 1	**Test 2**	**Test 3**
Independent Variable Change You Made			
Trial 1: Dependent Measure and Observations			
Trial 2: Dependent Measure and Observations			
Trial 3: Dependent Measure and Observations			
Average			
Was your hypothesis correct?			

Station 3: Canopy Suspension Length			
Control Variables (list all of them)			
Dependent Variable			
Independent Variable			
Hypothesis			
	Test 1	**Test 2**	**Test 3**
Independent Variable Change You Made			
Trial 1: Dependent Measure and Observations			
Trial 2: Dependent Measure and Observations			
Trial 3: Dependent Measure and Observations			
Average			
Was your hypothesis correct?			

Design Your Blueprint

Based on the data you have collected in the stations, which parachute design do you think would be best to get your 'ulu fruit safely to the ground?

Draw and label a blueprint of your best design below. Make sure to include a feature that will securely hold the 'ulu you have received because you will test the parachute several times.

Build and Test

- Build your parachute.
- Run three trials of your parachute. Document in the space below the fall time and other observations related to “protecting” the 'ulu as it falls:

Assess and Reflect

Revise your Claim, Evidence, Reasoning (CER) statement on what the best parachute would be for Kai‘ulani and Kekahu:

Are there any changes you would make to your parachute design if you had more time?