

Student Name: _____

School: Kamehameha Schools

Overall Evidence Pages Evaluation: EXCEEDED _____ MET _____

Grade: **5**

2016 Solar Boat Regatta Exhibition
Science Benchmarks Evidence Pages

Science Standard 2:
The Scientific Process: Nature
of Science – Understand that
science, technology, and society
are interrelated

*Benchmark 5.2.1:
Use models and/or simulations
to represent and investigate
features of objects, events, and
processes in the real world.*

MODELS and/or SIMULATIONS

The solar boat activity is a model or simulation of _____

In other words, _____

For example (or another example), _____

**Models and simulations help us to understand features and
processes of the real world** _____

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Science Standard 1:
The Scientific Process:
Scientific Investigation –
Discover, invent, and
investigate using the skills
necessary to engage in the
scientific process

*Benchmark 5.1.1:
Identify the variables in
scientific investigations and
recognize the importance of
controlling variables in
scientific experiments.*

VARIABLES in Scientific Investigations

Variables in the solar boat construction were _____

Two variables that I tried to control in my solar boat were _____

It is important to control variables in this investigation because ____

For example, _____

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Science Standard 1:
The Scientific Process:
Scientific Investigation –
Discover, invent, and
investigate using the skills
necessary to engage in the
scientific process

*Benchmark 5.1.2:
Formulate and defend
conclusions based on evidence.*

CONCLUSIONS in Scientific Investigations

One problem with my solar boat was _____

My hypothesis for solving this problem was _____

The results I had from experimentation and data analysis were

Based on the evidence above, I concluded that _____

Science Standard 6:
Physical, Earth, and Space
Sciences: Nature of Matter and
Energy – Understand the nature
of matter and energy, forms of
energy (including waves) and
energy transformations, and
their significance in
understanding the structure of
the universe

*Benchmark 5.6.1:
Identify different forms of
energy (e.g., thermal, electrical,
nuclear, light, sound) and how
they can change and transfer
energy from one form to
another.*

ENERGY and ENERGY TRANSFER

The energy that powers the solar boat is _____ energy.

In other words, (explain how the energy gets to the boat).

_____ *energy is transferred into _____
energy in the solar boat.*

In other words,

In general, another form of energy is _____.

This energy can transfer into _____ energy.

In other words,

For example, _____

Solar Regatta Exhibition

Assessing for Quality Product

Boat Number: _____

School: Kamehameha Schools

Student Name: _____

Place an “X” in the box if the item has been met: (i.e. (X) Boat measurement....). Leave box blank if the item has not been met.

#1

#2

		Boat measurement is within 20 cm (W) x 45 cm (L) x 30 cm (H).
		Boat is safely constructed (no sharp edges or projectiles).
		Boat alpha and numbers are attached on both sides, 2 cm height minimum.
		No batteries/energy storage devices attached to the boat.
		Energy <u>enhancing</u> device(s) (i.e. mirror) is attached to boat at check-in, entire boat with device(s) attached fits in dimension box.
		Boat has a storage device attached.
		Motor and solar panel are not modified.
		Boat is sturdy and will not fall apart.
		Boat propeller spins in sunlight.
		Boat has no inappropriate comment or design on it.

Verified by: Student Inspector #1 Signature _____

	Met all of the above criteria for quality product
	Needs improvement

Verified by: Student Inspector #2 Signature _____

	Met all of the above criteria for quality product
	Needs improvement

Verified by Teacher: _____

Solar Regatta Exhibition

Assessing Quality Performance

Boat Number: _____

School: Kamehameha Schools

Student Name: _____

Meeting the Standard: 2-meter run within 15 seconds; 2 runs

Boat traveled 2 meters within 15 seconds

(Timer will record the time for each run and initial appropriate box.)

Run 1 Time: _____seconds	☐	Met	☐	Need work, retry, no run
Run 2 Time: _____seconds	☐	Met	☐	Need work, retry, no run
Run 3 Time: _____seconds	☐	Met	☐	Need work, retry, no run
Run 4 Time: _____seconds	☐	Met	☐	Need work, retry, no run
Run 5 Time: _____seconds	☐	Met	☐	Need work, retry, no run
Run 6 Time: _____seconds	☐	Met	☐	Need work, retry, no run
Run 7 Time: _____seconds	☐	Met	☐	Need work, retry, no run

Exceeding the Standard: Carrying 3 oz. weight 2-meters within 30 seconds, 2 runs

Boat carried 3 oz. 2-meters within 30 seconds

(Timer will record the time for each run and initial appropriate box.)

Run 1 Time: _____seconds	☐	Met	☐	Need work, retry, no run
Run 2 Time: _____seconds	☐	Met	☐	Need work, retry, no run
Run 3 Time: _____seconds	☐	Met	☐	Need work, retry, no run
Run 4 Time: _____seconds	☐	Met	☐	Need work, retry, no run
Run 5 Time: _____seconds	☐	Met	☐	Need work, retry, no run
Run 6 Time: _____seconds	☐	Met	☐	Need work, retry, no run
Run 7 Time: _____seconds	☐	Met	☐	Need work, retry, no run