

APPENDIX B: DESIGN RATING SURVEYS (DRS)

MILK FROTHER DRS

1. Is the device handheld?

- Yes, it's handheld
- No
- Not Explicitly Stated

(if not handheld)

2. If the device is NOT handheld, what does it look like?

- it has a stand (for the counter-top)
- its goes in or is attached to a cup (includes a handle)
- it goes in or is attached to a bowl (does not include a handle)
- it goes in or is attached to a pitcher/ blender
- It's attached to a coffee maker-type device
- Other, describe: _____

(If handheld)

3. Since the device is handheld, what does the handheld surface look like?

- It closely resembles the example
- It has a different size (longer, shorter, thinner, wider, etc) than the example
- It has finger grips
- It has an ergonomic grip
- It is held differently than example.
- It is rounded/ curved.
- Other, describe (e.g. 'gun shape') : _____
- Not Explicitly Stated

(If handheld)

4. What material is the device's body made of?

- Plastic
- Metal
- Other (describe e.g. 'gel'): _____
- Not Explicitly Stated

5. How is the device powered?

- Manually powered (e.g. hand pump)
- Electric
- Other, describe: _____
- Not Explicitly Stated

(if the device is powered by electricity)

6. What is the device's electrical source?

- AC (Plugs into wall or some other source)
- Battery(ies), non rechargeable.
- Rechargeable

- Solar
- Other, describe: _____
- Not Explicitly Stated

(if powered by batteries)

7. Where are the device's batteries inserted?

- At bottom of device with slide cover like example
- At bottom of device with screw cap
- At bottom of device with other (describe): _____
- Other location, describe: _____
- Not Explicitly Stated

(if powered by batteries)

8. How are the batteries connected?

- In parallel, like the example
- In series
- There is only 1 battery.
- Other type of connection, describe: _____
- Not Explicitly Stated

(if the device is powered by electricity)

9. How is the device turned on?

- By toggle switch, like in the example
- By push button
- By a switch (unspecified type)
- By selecting a speed.
- Other, describe: _____
- NA

(if the device is powered by electricity)

10. Where is the power switch located?

- On the side, like in the example
- On the side, unlike the example
- On top.
- Other, describe: _____
- Not Explicitly Stated

11. Where is the liquid (milk) stored for frothing?

- Outside of the device, like in the example.
- Inside of the device.
- Other, describe: _____
- Not Explicitly Stated

12. Is there a rod in the design?

- Yes
- No

(If there is a rod in the design)

13. What does the device's rod look like?

- It connects the main body or motor of the device to an attachment, as in the example.
- It's a different size (length or thickness) than the example

- It's made of a different material
- There are multiple rods
- It's a different shape
- It's retractable
- Other, describe: _____
- Not Explicitly Stated

(if there is a rod)

14. Is there an attachment at the end of the rod?

- Yes
- No

(if there is an attachment at the end of the rod)

15. How does the attachment (at the end of the rod) differ from the original design?

- It doesn't
- It's a different size
- There are multiple attachments
- It is made of a different material.
- It has a different amount of flexibility.
- It has a different shape, describe (e.g. metal spokes, beater, propeller, paddle, etc): _____
- It is oriented differently on the device
- Other, describe: _____
- Not Explicitly Stated

16. What method does the device use to froth the milk?

- Stirring, like in the example.
- Steam
- Spinning (a container of milk)
- Pumping
- Shaking or vibrating the entire body of milk
- Bubbles/ air
- Microwave/ waves of some type
- Chemicals
- Heat
- Laser
- Pressure/ pressurized milk
- Vibrations
- Magic
- Not Explicitly Stated

(If frothed by stirring)

17. What kind of motion does the device use to stir the milk?

- Circular, in 1 direction, like the example.
- Circular, in multiple directions
- Up and down
- Side to Side
- Other, describe: _____
- Not Explicitly Stated

18. Does the concept focus on motor, electrical wirings, or the batteries of the device?

- Yes
- No

(if the concept focuses on the motor, electrical wirings, or batteries of the device)

19. Since the concept focuses on the motor, electrical wirings, or the batteries of the device, what part does it focus on?

- The wires/ connectors
- The motor (e.g. changing DC motor, pump)
- The motor casing/ cover material (e.g. second interior coating to reduce corrosion)
- The batteries
- Other, describe: _____

20. What additional features are included in the concept?

- Lid
- Interchangeable attachments (e.g. whisks)
- Design (colors, etc.)
- Noise level change
- Waterproof
- Sensor
- Adds flavor
- Different speed settings
- Other, describe: _____
- Not Explicitly Stated

21. Does the device froth milk?

- Yes
- No

(if the device froths milk)

22. Is the device technically feasible (is it **possible** to make it)?

- Yes
- No

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(if the device is technically feasible)

23. Is the concept easy to execute (is it easy/**plausible** to manufacture and implement it)?

- Yes, even if it may be slightly more complicated.
- No, it is either unreasonable to make, or you would never use it to froth milk.

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(if the device froths milk)

24. Is the concept a significant improvement over the original design?

- Yes.
- No.

GREENHOUSE GRID DRS

1. Does the concept focus on a method for laying out a 6m x 6m grid on the ground or a method for leveling the ground?
 - a. Method for laying out 6m x 6m grid
 - b. Method for leveling the ground
 - c. Both
 - d. Not Explicitly Stated

2. (if focuses on laying out 6m x 6m grid) Does the concept focus on measuring out a grid, or marking the grid on the ground?
 - a. Measuring out a grid
 - b. Marking the grid on the ground

3. (if focuses on measuring out a grid) What approach does the concept use to measure out the 6m x 6m grid?
 - a. Measuring shapes
 - b. Sticks/ rods
 - c. Flexible/ hinged linkages
 - d. String
 - e. Wheels
 - f. Vehicle
 - g. Net
 - h. Projection of grid pattern or measurement on the ground
 - i. Footsteps
 - j. Other: _____
 - k. Not Explicitly Stated

4. (if the concept uses measuring shapes) What does the measuring shape look like?
 - a. Triangular
 - b. Square/ rectangular
 - c. Circular
 - d. Cube
 - e. A cross/ 'X'
 - f. Other: _____
 - g. Not Explicitly Stated

5. (if the concept uses measuring shapes) What material is the measuring shape made of?
 - a. Paper
 - b. Plastic
 - c. String
 - d. Wood
 - e. Other: _____
 - f. Not Explicitly Stated

6. (if the concept focuses on marking the grid on the ground) What method does the concept use to mark the ground?
 - a. Flying projectiles
 - b. Rolling cylinders with spikes
 - c. Rolling wheels with spikes
 - d. Spray paint
 - e. Manual hand drill
 - f. Shovel

- g. Other: _____
 - h. Not Explicitly Stated
7. (if the concept uses Projection of grid pattern on the ground) What light source does the concept use to project the grid pattern on the ground?
- a. Sunlight
 - b. Flashlight
 - c. Electronic projector
 - d. Other: _____
 - e. Not Explicitly Stated
8. (if focuses on method for leveling the ground) Which approach does the concept use to level the ground?
- a. Hanging weight
 - b. Container with liquid
 - c. Conventional liquid bubble level
 - d. Tarp
 - e. Stakes
 - f. Shovel
 - g. Other: _____
 - h. Not explicitly stated
- 9.
10. (if focuses on method for laying out 6m x 6m grid) Does the concept approach the problem using a single step or multiple steps?
- a. A single step
 - b. Multiple steps
 - c. Not Explicitly Stated
11. (if focuses on method for laying out 6m x 6m grid) Does the concept rely on human labor or machines to satisfy the design goal?
- a. Human labor
 - b. Machines
 - c. Not Explicitly Stated
12. What additional features does the concept involve?
- a. Robots
 - b. Lego pieces
 - c. Other: _____
 - d. Not Explicitly Stated
13. Does the concept provide a method for laying out a 6m x 6m grid on the ground or a method for leveling the ground?
- a. Yes
 - b. No
14. (if the concept provides a method for laying out a 6m x 6m grid on the ground or a method for leveling the ground) Is the concept technically feasible (is it possible to make it)?
- a. Yes
 - b. No
15. (if the concept is technically feasible) Is the concept easy to execute (is it easy/ plausible to manufacture and implement it)?
- a. Yes
 - b. No