

# Background and Market Research:

## 12 “Lunchibles”

### Overview:

Overall, market research has revealed that there are many existing lunch bags that encompass the same opening mechanisms that prototyping and ergonomic studies have shown to be appropriate for one-handed use. However, many of these lunch bags still have shortcomings when it comes to fulfilling all the needs of a client who may struggle with using opening lunch boxes with one hand. For example, numerous lunchboxes are easily knocked over or have the tendency to slide along surfaces when being operated with one hand. As a result, it has been concluded that modifying lunch boxes that already use appropriate opening mechanisms would be the most efficient course of action in achieving a usable prototype.

### Igloo Playmate Pal (Used in Prototyping)



Material:	Polyethylene with a polypropylene liner
Handle Type:	Top carry handle
Volume:	7 quarts
Dimensions:	12 in H x 8.25 W x 11.75 in L
Weight	2.2 lbs
Cost	\$12.99

The Igloo Playmate Pal cooler is a lightweight, carryable cooler with a locking, button latch lid. The lid rotates freely on an axle and locks in the top position only. Pushing the button on the lid releases the locking mechanism and allows the lid to rotate freely. While it is overall very lightweight, much of the weight of the lunchbox is concentrated in the lid. As a result, when the lunchbox is opened, the weight of the lid causes the entire lunchbox to tip over. While being very easy to open with one hand, if opened quickly, the lid often gets stuck at the bottom, making it very difficult for a user to close with one hand. Finally, when opening or closing the lunchbox, the bottom of the lunchbox, being made of smooth plastic, slides on the table, making it very difficult for a user to operate it.

In order to improve this product so that it meets the needs of our client, the following modifications must be made: additional weight must be added to the bottom of the box in order

to prevent tipping and to make it easier for the user to break the lid free with one hand when it gets stuck at the bottom of the box, and high friction feet must be added to the bottom of the lunchbox in order to prevent slipping.

### Igloo Island Breeze 9 Quart Cooler



Volume:	9 quarts
Dimensions:	13 in H x 9.5 W x 8.88 in L
Weight	3.02 lbs
Cost	\$16.99
Handle Type:	Swing-up handle

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The Igloo Island Breeze has a sturdy swing up handle for carrying. The cooler itself is made of hard Polyethylene plastic and uses a removable magnetic snap-on lid. While the lid may be easy to remove with one hand, placing the lid back on the box proves more difficult as it must be placed on the lunch box with precision so that the lid can snap back onto the lunch box magnets. The cooler body is fairly heavy enough that lunchbox rarely tips over. The unit has no high-friction feet, allowing it to slip very easily.

Similar to the Playmate Pal cooler, in order to improve this product so that it meets the needs of our client, the following modifications must be made: the addition of an axle on the lid so users do not have to place it on the box or a new rim design that allows the lid to be easy slid into place rather than place, and the addition of high friction feet.

## Coleman 5 Quart Cooler



Material:	Plastic
Volume Capacity:	5 gal
Weight	1.834 lbs
Dimensions	(L x W x H) 8.10 x 10.70 x 7.25 Inches
Handle Type:	Swing-up handle

Brand:	Coleman
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The Coleman cooler has a non-magnetic, weighted lid that rotates on an axle. This style of lid makes it possible for the cooler to be easily opened with one hand, as it essentially has the same design as the Igloo Island Breeze but uses weight rather than magnets to close. The body of the lunchbox is also weighted, preventing it from easily tipping over. Similar to the Island Breeze and Igloo Playmate Pal, this cooler is difficult to open without causing it to slide across a table.

In order to improve this product so that it meets the needs of our client, the following modifications must be made: the addition of high friction feet to the bottom of the lunchbox in order to prevent slipping.

## Bentgo Kids



Opening Mechanism	Two Latches
Material:	Plastic
Safety	FDA Approved, No BPA, Vinyl, Lead, or PVC
Weight	1 lb4 oz
Dimensions	8.5" x 6.5" x 2"
Handle Type:	Plastic Carry Handle

The Bentgo Kids is a light-weight lunch box containing dividers that separates the lunchbox into areas where food can be placed directly. The lunchbox is also machine washable, and complies with all FDA regulations. The opening system that this lunchbox utilizes is a latch system, in which the latch is attached to the lid and latches onto the base of the lunchbox. This makes it easy for a user with full mobility in one hand to open this lunch box. However, someone lacking fine motor skills in both hands will find it difficult to grab on to the latches and open. Because of the latch system, tipping the lunchbox is unlikely.

In order to improve this product so that it meets the needs of our client, the following modifications must be made: the addition of high friction feet to the bottom of the lunchbox in order to prevent slipping, and a modification to the latches such as the reorientation of the latches in order to make it easier to open the lunchboxes with limited mobility.

## Citations

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