

## **Activity 1: Design a Cell Phone for Business People – Teacher Page**

Please start by reading the student pages below to understand the activity.

You can help students estimate the costs and impact on battery life of additional features by consulting an electrical engineer in your area, or simply by simply making an educated guess. The point of the exercise to understand the engineering design process and the trade-offs that exist with any design. If the prices and battery life are not truly accurate, this will not impact student learning to any great degree.

To do audience research, you can do one of the following:

1. Have students divide into groups of three or four. Have them present their phones to their groups to evaluate and critique the design. You might want to cover the basics of constructive criticism in advance, if your students are not used to evaluating each other in this way.
2. Have the students take their phone designs to business people they know in the community. This could be their parents, neighbors, adults they know from religious or community gatherings, or perhaps even the PTA or adults that you arrange to come in for this activity. The students should take careful notes of the features that these business people like and dislike and should then share their data with the class. By sharing data, the class can get a better picture (more data points) of what this group generally does like. As a follow up, students can redesign their phones to fit what the audience research is telling them.

For option 2 above, you could also have the students decide the best way to present the data they have collected so that it would make sense to a client.

### **Discussion Questions:**

- What were the biggest differences between this audience and the senior citizen audience?
- What were some of the toughest decisions or trade-offs you had to make?
- Did anyone have any outliers in their audience research? Was there a person that liked features that were very different from what the majority of people seemed to like?

## Activity 1: Design a Cell Phone for Business People – Student Pages

Age range: 30-60 years of age

Population demographic: This population runs their businesses using their cell phones extensively. They connect to customers, their offices and coworkers with their phones, making sales, sharing information, communicating decisions and updating their calendars. They often travel, necessitating their being away from their desktop computers for days at a time. They often have luggage, sales information or samples to carry in addition to a laptop computer. They do not want to have to carry additional pieces of equipment to accomplish different tasks and the more streamlined and sturdy the equipment they have can be, the better they like it.

### Selected Interviews Taken from Research on Business Users

Interview 1: *My cell phone is my primary link to my office. When I'm out making sales calls, this is how I stay in touch with my coworkers and my clients. I don't need a camera and a lot of games and I don't need a pink or a purple phone or a 100 ring tones. I need one that is reliable, sturdy enough for me to drop or stack books on, and has a decent battery life. There is nothing worse for me than losing a call in the middle of a conversation with a client.*

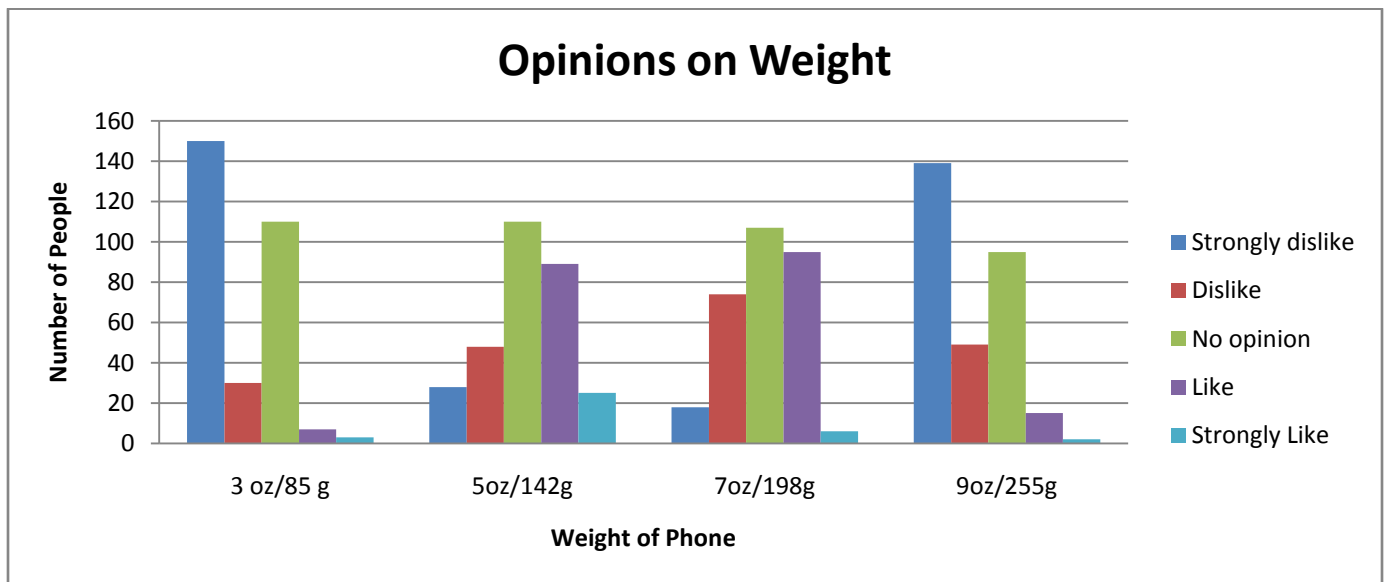
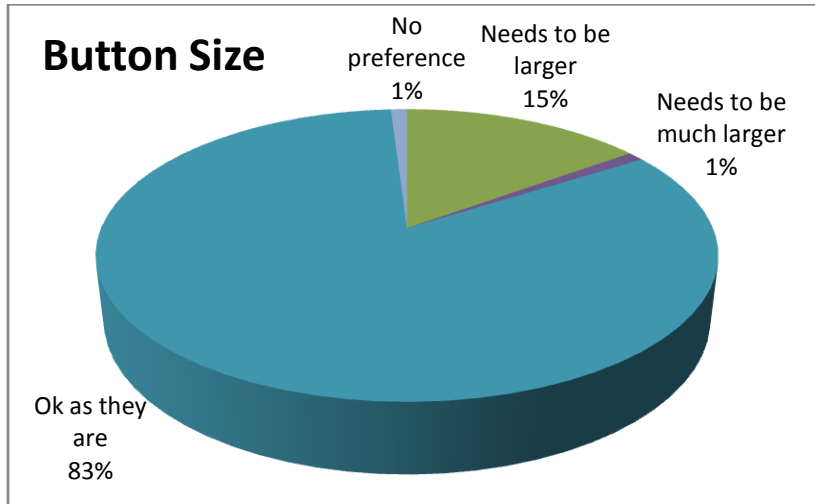
Interview 2: *Anything that improves communication is great with me. I can't run my business without a dependable phone. I get frustrated with ones that require charging every couple of hours – I don't have the time and I'm not always in a place where I can charge it. Besides a longer battery life, I'd like one that has a bigger screen, so I can read more email at a time without having to scroll so much.*

Interview 3: *I'd like a phone that acts more like a combination of phone and desk top. It's be great to show clients videos of the products I sell, while being able to easily receive and send email and text messages. So I guess I want a larger screen and easier keyboarding. I also want a longer battery life so I'm not trying to compete with every kid and business person in the world for the two unoccupied plugs in the airport.*

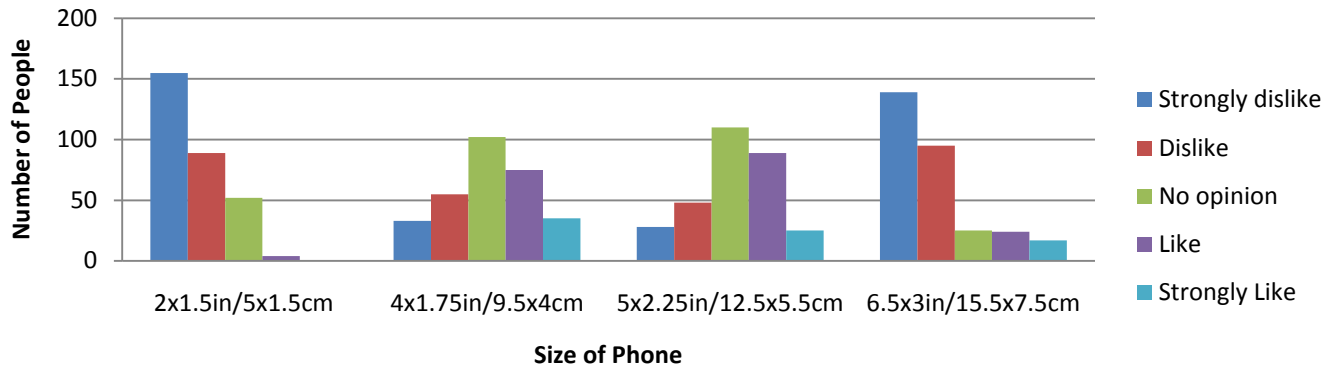
Interview 4: *It's important that my phone be sturdy and easy to hang on to. I go a lot of places with concrete floors and heavy machinery. And everyone knows how tough airports are on luggage, even carry-on bags. So it's got to be tough enough to last. I also need internet access to send and receive email, texts, and to share research on new products for my customers.*

Interview 5: *I'm not interested in cool or fashionable – I want reliability and functions I use every day. Functions like email, internet and voice mail. I also want to be able to see the screen more easily and to be able to turn up the volume farther when I need to. I can be in some pretty loud places and still need to be able to take or make a call. All the other stuff like cameras and games don't interest me at all. They just take up screen or button space that could go for something I really use.*

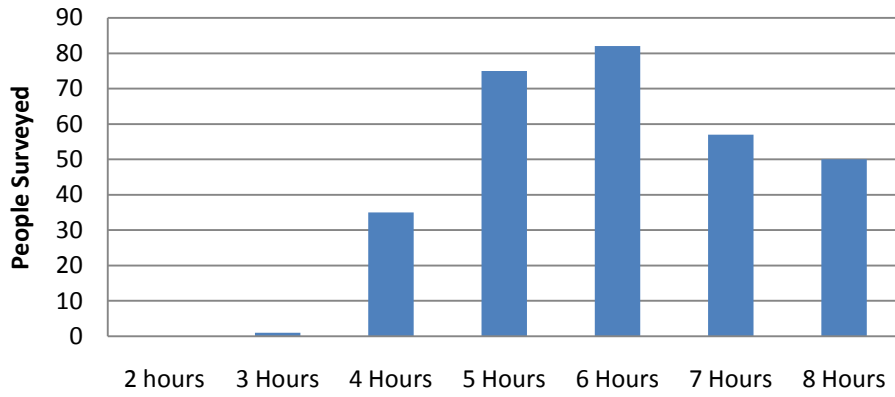
## Design a Cell Phone for Business People



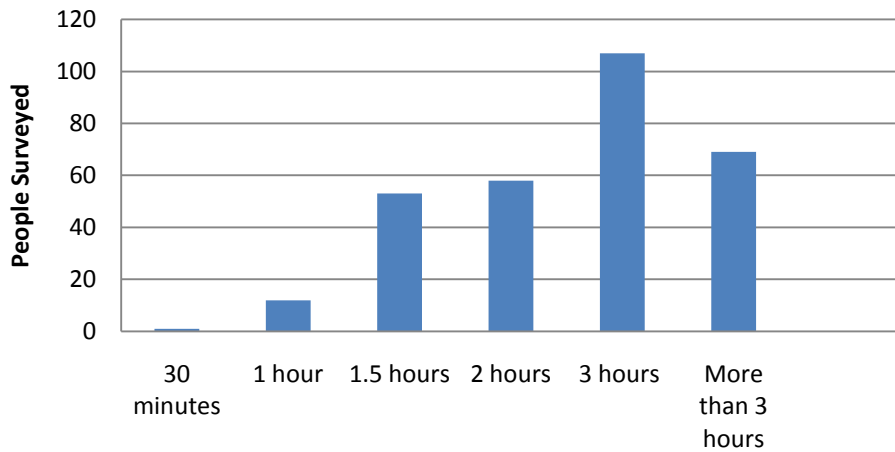
## Opinions on Size of Phone



## Preferences for Battery Life for Continuous Talking



## Average Use Per Day



**Design a Cell Phone for Business People – Student Pages**

Sketch the ideal cell phone for this audience in the space below. We recommend using a pencil so you can erase if you change your mind. You can add additional features below. Estimate what you think each feature would cost and include that in your cost calculations. Estimate whether the features would increase or decrease battery life. Your phone should not cost more than \$150 to produce for this audience, so the sales price will remain below \$250.

**Sketch your phone here:**

**List of features:**


**Total Cost of Phone:** \_\_\_\_\_

**Estimated Battery Life:** \_\_\_\_\_