# Appendix A: Laboratory Task Instructions

**THE HOUSE**

A value will be assigned to the house according to its square footage, with bonuses added for quality and aesthetics. The values are as follows:

Square footage (each “knob” is equal to one square foot)

* $10 per square foot on the ground floor
* $20 per square foot on the second floor
* $50 per square foot on subsequent floors

Quality: assessed using the “lift, flip, and drop test”

* no value added for buildings that cannot be lifted without any pieces falling off
* $1000 bonus for buildings that can be lifted
* $1500 bonus for buildings that can be lifted and flipped over
* $2000 bonus for buildings that can be lifted, flipped over, and dropped

Aesthetics: the attractiveness of your building will be assessed according to the following criteria:

* no value added for buildings that are a total eyesore
* $1000 bonus for good use of color
* $1500 bonus for good use of color and symmetry
* $2000 bonus for a “work of art”

Additional Rules:

* The walls separating the individual stories of the house must be least two (2) blocks high.
* Each story of the house must be completely enclosed by a floor and a ceiling for it to count toward the point total. The ceiling of one story can also be considered the floor of the next story.
* The walls around the outside of the house must be two knobs thick.
* There must be a cement foundation (a layer of white Lego bricks) between the house and the ground, though it does not need to be directly touching the ground. This should be the same dimension as the first story of the house, and can, but is not required to, serve as the floor of the first story as well.
* There must be a solid layer of blue blocks between the top of the house and the sky. This should be the same dimension as the top story of the house and can, but is not required to, serve as the roof of the house.

**THE GARAGE**

Square footage (each “knob” is equal to one square foot): $20 per square foot

Quality: assessed using the “lift, flip, and drop test”

* no value added for buildings that cannot be lifted without any pieces falling off
* $1000 bonus for buildings that can be lifted
* $1500 bonus for buildings that can be lifted and flipped over
* $2000 bonus for buildings that can be lifted, flipped over, and dropped

Aesthetics: the attractiveness of your building will be assessed according to the following criteria:

* no value added for buildings that are a total eyesore
* $1000 bonus for good use of color
* $1500 bonus for good use of color and symmetry
* $2000 bonus for a “work of art”

Car spaces: $2000 for each individual parking space in the garage

Parking spaces must be at least 20 square feet (knobs) in size and have a door opening that is at least 4 knobs wide and 2 blocks high to qualify for this bonus.

Additional Rules:

* The walls of the garage can be either one knob or two knobs thick.
* There must be a cement foundation (a layer of white Lego bricks) between the garage and the ground, though it does not need to be directly touching the ground. This can, but is not required to, serve as the floor of the garage as well.
* There must be a solid layer of blue blocks between the top of the garage and the sky. This should be the same dimension as the top of the garage and can, but is not required to, serve as the roof of the garage.
* The garage must be completely enclosed on the top, bottom, and sides, except for specified doors.

**THE POOL**

Square footage (each “knob” is equal to one square foot): $50 per square foot

Aesthetics: the attractiveness of your pool will be assessed according to the following criteria:

no value added for pools that are a total eyesore

* $1000 bonus for good use of color
* $1500 bonus for good use of color and symmetry
* $2000 bonus for a “work of art”

Additional Rules:

* There must be a diving board included.
* The floor of the pool must be blue.
* The walls around the edge of the pool should only be one knob thick and three blocks high, and should be one solid color (of the designer’s choice) all the way around.