Human Sensor Rubric (100 points total)

Student name: _____

Design & Craft

	10 PTS	6 PTS	3 PTS	0 PTS	POINTS EARNED
BASIC REQUIRE-MENTS	There are at least four independently controllable LEDs attached (i.e. connected to different pins) and two conductive patches in the design	Most of the project components are there but not all. Some LEDs might be missing or the patches might not be connected. Still, the project mostly meets the basic requirements.	This project needs more work. Some components are there (a couple of LEDs, maybe a sensor patch) but a lot is missing.	No lights, no sensor patches, basically no project at all.	
	10 PTS	**6 PTS**	**3 PTS**	**0 PTS**	
DESIGN NOTE-BOOK	All Design Notebook entries completed.	Most Design Notebook entries completed.	Only a few Design Notebook entries completed.	No Design Notebook entries are complete.	
	15 PTS	**10 PTS**	**5 PTS**	**0 PTS**	
SEWING	• Each electrical component is securely sewn in on each pin (neatly stitched through at least three times). • Stitches are neat, evenly spaced and secure (The thread is pulled flat on both sides of the fabric, stitches are about a ¼ inch in length, there are no stray threads or big accidental knots, etc.). • The back of the project is as neat as the front. Knots are secure and tight. No loose threads are present.	• Some electrical components are sewn in well (neatly stitched through at least three times), but some are not. • Stitches are overall neat but some are uneven in ways that affect the longevity of the project (i.e., could be pulled out too easily). • Some knots are well secured but others are loose or fraying in ways that could compromise the circuitry.	• Most electrical components are insecure and loose, affecting the steadiness of electrical connections. • Stitches are big and untidy; this could affect the project in the long term (i.e., they could be snagged or pulled out). • The back of the project is a mess and there are many loose threads or fraying knots that are compromising how the project works.	• This project is so poorly sewn it's almost non-existent. Everything is loose or unconnected. • The back is a mess with loads of touching threads. Pieces are falling off. • Or maybe you used non-conductive thread to sew electronic pieces on.	
	Comments on sewing:				

	15 PTS	10 PTS	5 PTS	0 PTS	
DESIGN	• The design appears to be purposeful and/or personal. Care has been taken in the look and feel of the project. How it looks is intentional. • Decorative parts are sewn or glued on with care • The project is finished. All final touches are done. • Students can justify their design if helpful (written, verbal).	• The design is okay, but not very personal or purposeful. It seems a bit thrown together. • Decorative parts are somewhat haphazardly attached. • The project isn't quite finished. Some final touches are clearly needed.	• Did you really put much thought into the design? It seems as though you just threw it together without thinking about who would enjoy it or how it would look. • Decorative parts are haphazardly attached and the project looks messy. • The project is very unfinished: pieces are missing, parts were slapped together last minute, the whole mthing is far from coming together.	There is no design; there is basically no project. No effort at all has been taken on actually making something that is intentional for whatever reason.	
	Comments on design:				

Circuitry

	15 PTS	10 PTS	5 PTS	0 PTS	POINTS EARNED
DIAGRAM	• The diagram is clear, readable, and functional (it would work if constructed). Someone else could use this to make the design themselves! • Circuit Playground pins are clearly labeled (i.e., 0, 1, 2, 12, etc.) on the circuit diagram. • Positive and negative pins/lines are distinct on the circuit diagram.	There is a circuit diagram and it would functional, but it needs to be improved in order for it to be thoroughly useable. Perhaps the pins or polarity (plus & minus lines) are not clearly labeled.	The circuit diagram needs a lot of improving. It would not be functional if constructed (there are crossed lines) and it is almost entirely unlabeled. It's hard to tell what part is which and how things are supposed to be connected.	There is no circuit diagram for this project.	

	5 PTS	3 PTS	1 PT	0 PTS	
LIGHTS-ON	• The lights function when a Circuit Playground is powered. • *Note:* Patterns are considered below. This is just whether the lights turn on - i.e., a test of basic circuitry and not code.	Most of the lights turn on but not all.	One or two lights turn on when the Circuit Playground is connected to power.	No lights function when the Circuit Playground is connected to power.	
Comments on circuitry:					

Coding

	5 PTS	3 PTS	1 PT	0 PTS	POINTS EARNED
FOUR COMPLETE LIGHTING PATTERNS	There are four functional lighting patterns (i.e., would work if circuits were perfect). Each is different in some way.	Two or three lighting patterns have been programmed. Each is different in some way.	Only one lighting pattern has been programmed.	No lighting patterns have been programmed.	
	15 PTS	**10 PTS**	**5 PTS**	**0 PTS**	
CODING	• The code is great! • Each input and output has been declared in the Naming Section and set to output/input as needed in the Setup Section. • Needed variables are entered correctly and used consistently. • Conditionals are programmed effectively and are functional.	• The code is there but some minor improvements are needed (mostly syntactical). • Examples: There are extra (or missing) brackets; a variable/pin has been mislabeled; an input/output is missing or mislabeled.	• The code is there but a lot of improvements are needed. • Some sections need to be finished (maybe not all variables are listed, inputs/outputs are missing, conditionals are poorly programmed). • Or perhaps the conditionals are semantically mis-programmed.	• There is no code at all. • Or it is so poorly done that there might as well be no code.	

	5 PTS	3 PTS	1 PT	0 PTS	
COMMENTED CODE	Code is well commented—there are comments on each named lined at the top, on half of the input/outputs in the setup section, on the conditions, and some description of each lighting pattern.	Code is somewhat well commented. There are a few comments there saying what different parts do, but is it not consistent.	There are a couple of comments on the code but it has not been done consistently.	There are no comments on the code or they are incorrect (i.e., a direct copy/paste from sample code that no longer apply to the current code—like a mislabeled pin).	
	5 PTS	**3 PTS**	**1 PT**	**0 PTS**	
SENSORS	Aluminum foil sensors work and detect at least four variable levels of touch. The sensors are programmed to be continuous (or very intentionally non-continuous).	• Foil sensors are programmed but there are some minor problems. • Perhaps the ranges are not continuous or are miswritten (i.e., a minor problem with the operators, not using <= or >=). • Perhaps there are only 3 coded ranges.	• Some attempt has been made to code the ranges, but these have not been tested and do not work well. • The ranges are not continuous; there are large unintentional gap. • Perhaps there are only 1-2 coded ranges.	Aluminum foil sensors are not coded beyond the starter code.	
Comments on coding:					

Extra Credit

	POINTS EARNED
Use of additional coding elements such as fading, random light patterns, or sound.	
Additional conditions (i.e., more than 4 lighting patterns or similar outputs) triggered by the sensor.	
Some other form of going above and beyond on this project. *Specify:*	

Totals

DESIGN & CRAFT:		CIRCUITRY:		CODING:		EXTRA CREDIT:		TOTAL:	/100