

**Warm Up – Scientific Investigation**

*What is a smart grid?*

**What do you already know about smart grids? What do you want to know about smart grids?**

**Complete the first and second column.**

What do you know already?	What do you want to know?



## Lesson 1.4 - Smart Lighting Systems

### Student Workbook Component

#### Keyword Review

Match the keyword with its definition. 'Consumption' has been completed for you.

Grid	<i>capable of producing desired results especially without waste (as of time or energy)</i>
Electricity	<i>a device that detects a physical quantity (as a movement or a beam of light) and responds by transmitting a signal</i>
Dim	<i>a form of energy that is found in nature but that can be artificially produced by rubbing together two unlike things (as glass and silk), by the action of chemicals, or by means of a generator</i>
Sensor	<i>a network of conductors for distribution of electric power</i>
Efficient	<i>to use up or spend</i>
Consumption	<i>not bright or clear</i>

**Let's Discuss:** *In your workbook or with a partner, record, discuss, or share one example of how smart lighting reduces energy consumption.*

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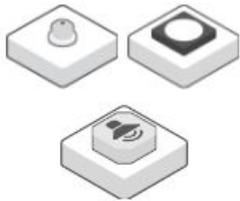
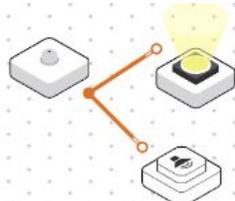
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### Challenge 2

*Design a smart lighting system that responds to the amount of light in the environment, has a mock occupancy sensor and a alert.*

Read the steps that describe Challenge 2. What happens First? Second? Third? Match the number of the step to each picture.

Step 1 has been completed for you.

Steps	Instructions	Workspace
Step 1.	Drag the Light Sensor block, RGB LED block and Sleeping Buzzer onto the Workspace.	
	Find the Filter function and add it to the between the Light Sensor, RGB LED and Buzzer. Set the filter values to 0-30.	
	Now, try it! <i>(Replace the Buzzer with Sound Player to see if they work interchangeably.)</i>	
	Find the On/Off block and add it between the Filter and Buzzer.	
	Connect the RGB LED and the Buzzer to the Light Sensor.	

**Why do you think the order of steps important?**

## Lesson 1.4 - Smart Lighting Systems

*Student Workbook Component*

**We can use transitional phrases to talk about the order events or actions that take place. Practice by using transitional phrases in order to present your system.**

Time & Sequence	Compare (+)	Contrast (-)	Cause and Effect
first/second/third	also	but	because
next	equally	however	so
after	likewise	otherwise	therefore
then	in addition	on one hand... ...on the other hand	as a result
finally/overall/to sum up	similarly	opposite	due to