

# Light and Shadows

## Create Animation with Keynote

### Activity

Students will use GIF animations to demonstrate their understanding of how the size of shadows will change with modification of different variables, such as object size, distance between light source and object and distance between object and screen.

### Objectives




- Students demonstrate understanding of the variables that affect shadows formed: size of object, distance between light source and object, distance between object and screen
- Students are able to communicate scientific concepts in an objective manner

### Extensions

Students can take pictures of shadows they observe in their environment along with the light source and object in a single photo. They can then draw light arrows from the light source, to the edges of the object and to the shadow. These marked up pictures can be shared on an LMS for all students to see

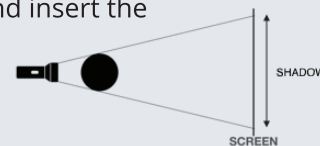
## Have a go




- 1 Open . Create a new document in Keynote. Tap on  >  and insert the following shapes:

A Circle: Object  
A Vertical Line: Screen

A Torch: Light Source  
2 Lines: Light Lines



- 2 Duplicate the first slide. Determine which variable should be changed for the GIF. Keep all other variables constant.  
Size of object: Tap on the circle and drag the edges to enlarge or minimise it  
Distance between object and light source: Tap on the torch and drag it to move it  
Distance between object and screen: Tap on the screen and drag it to move it  
Tap and drag the light lines once the variable has been changed.
- 3 Duplicate the second slide. Amplify the change in variable. Be sure to keep the other variables constant.  
Duplicate more slides and amend them to extend the GIF if necessary.
- 4 Export the Animated GIF into the Photos library.  
Tap on  > Export > Animated GIF. Ensure Slide Range includes all the slides with images.  
Tap on Export and then Share. Then select Save Image.
- 5 The animated GIF will appear in your Photos library. You can insert it into another document or upload it directly for your students.

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