

Animate a Pendulum, Part 1: The Arc and the First Swing

40 minutes

Following My Interests Online

Outcome 3.8

WHAT THIS LESSON DOES

Students draw a pendulum, build a locked guide layer for its arc, and animate the swing out to one side with deliberate frame spacing. This lesson counts towards outcome 3.8: students use these editing skills to build their digital montage in the montage lessons that follow.

CURRICULUM OUTCOMES

Outcome	What the specification asks for
3.8	create a digital montage on a specific topic of interest from images sourced online while applying learning regarding copyright, fair use, plagiarism, and intellectual property ownership

WHAT STUDENTS SHOULD BE ABLE TO DO

- Explain why frame spacing controls apparent speed
- Build a locked guide layer to hold a motion path
- Copy an element frame to frame so it keeps its size
- Animate a swing along an arc with spacing that matches real movement

BEFORE THE BELL

- Wick Editor needs no account, so the set-up is the same as the previous lesson: open wickeditor.com in a browser and start a new project.
- For the Start, have something to swing at the front: keys on a lanyard, or any small weight on a string.
- This lesson follows on from the first animation lesson and assumes onion skinning is familiar. If the class has not done that one, do it first, because this will not stand alone.
- The physics is worth one sentence and no more: a pendulum is slowest at the top of each swing and fastest through the bottom. Everything else in the lesson follows from that.
- Copying the bob from frame to frame instead of redrawing it is the part students find fiddly, and it is also the part that keeps the bob the same size all the way along the arc, so it is worth spending the time on it in Hands-on: Swing it to one side .
- Devices with a browser. Wick Editor needs no account, but it keeps nothing once the tab closes.

WHAT YOU NEED

Item	Qty	Per	If you do not have it
Chromebook/Laptop/PC		student	
Wick Editor needs no account			Free, browser-based, no sign-up and no adverts. Work saves to the browser, not a server, so students must export before closing the tab.

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HOW THE LESSON RUNS

4 min	introduction	Start
4 min	content	Spacing is timing
13 min	activity	Hands-on: Draw the pendulum and its arc
13 min	activity	Hands-on: Swing it to one side
4 min	content	Make sense
2 min	summary	What you covered

STEP BY STEP

4 min Start

Anything on a string works. The pause at the top is the thing to point at.

4 min Spacing is timing

Draw the arc on the board with dots: crowded at the ends, spread in the middle.

13 min Hands-on: Draw the pendulum and its arc

The guide layer is what makes the swing curve instead of sliding sideways, so watch for anyone starting the animation without one and send them back to build it first: a bob with no path to follow slides across the stage in a straight line and the spacing work in the next step will not rescue it.

13 min Hands-on: Swing it to one side

Copy-paste rather than redraw is the whole trick. A class that redraws gets a bob that pulses in size.

4 min Make sense

Have one student put their timeline on the board. Comparing spacing across the room is the quickest feedback there is.

2 min What you covered

Check everyone saved a .wick file before they leave. Wick keeps nothing dependable once the tab closes, and next lesson starts by opening that file.