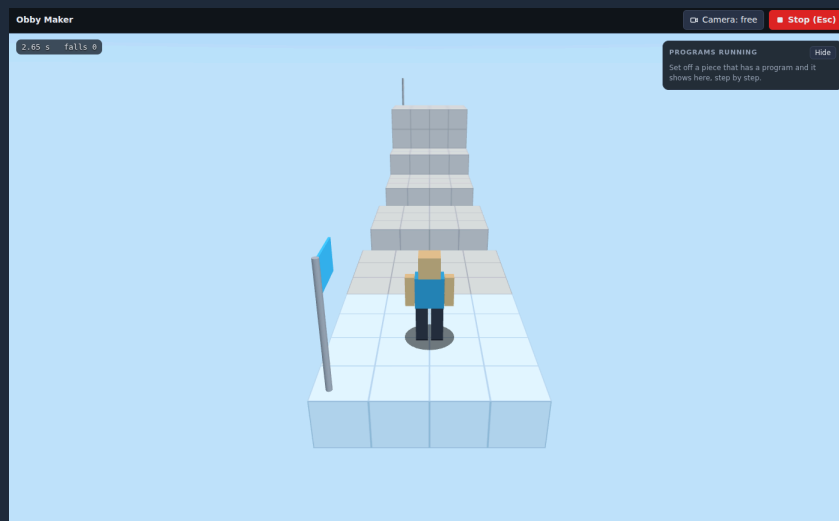


mytekDev

Obby Maker: Build a Fair Obby

Grades 4-8 · 45 minutes

Computer science · Game design



Slides, rubric and answer key

Print and go

No student accounts

Game design and testing

What's included

- A one-page overview: objectives, essential question, vocabulary, standards and assessment
- A ten-minute walkthrough to rehearse before class, and background in plain words for the teacher
- A 45-minute lesson sequence: warm-up, direct instruction, guided practice, independent practice, closure
- Slides for the board: a PowerPoint file that also opens in Google Slides
- A student worksheet with a QR code
- A 3-question exit ticket, two to a page, with an answer key
- A rubric: 3 criteria, 4 levels, scored out of 12
- Differentiation for English learners, students with IEPs or 504 plans, and students who need more support or more challenge
- Cross-curricular extensions, and notes for teaching it in grades 2-3 and 9-12
- Standards: CSTA 2017

Obby Maker: Build a Fair Obby

Grades 4-8 · 45 minutes · Computer science, Game design

Students play a three-stage obby and work out the rule behind every jump: 4 blocks across or 2 up, never 5. They build a stage of their own, and the app tells them in a sentence whether it can be finished. At the end, classmates trade seats and play each other's stages.

At a glance

ESSENTIAL QUESTION

What makes an obstacle course hard but fair?

OBJECTIVES

Students will be able to:

- explain the difference between a jump that is hard but fair and one that nobody can make
- use the jump rule (4 blocks across or 2 up) to place platforms a runner can reach
- place a checkpoint so a fall sends the runner back a short way, not to the start
- test a stage by playing it from start to finish, and fix the jumps that fail
- improve a stage using what a classmate's playtest shows

VOCABULARY

obby, runner, stage, checkpoint, jump arc, fair, playtest, Can it be finished?

STANDARDS

1B-AP-13, 1B-AP-15, 2-AP-15

TIME AND MATERIALS

45 minutes, grades 4-8.

- One computer per student, with a keyboard and a mouse
- A projector
- The worksheet and exit ticket, one copy each per student
- The rubric, one copy per student if you grade the stage

PREP

Make copies of the worksheet and exit ticket. Before class, open mytekdev.com/try/obby?lesson=build-a-fair-obby&ref=tpt-obby-1 once on a student computer to see the starter course and to check that your school's filter allows it. No account is needed.

ASSESSMENT

- Formative: the questions under What to look for, asked while students work, and the exit ticket (answer key included).
- Summative: the student's own stage, scored with the rubric out of 12.

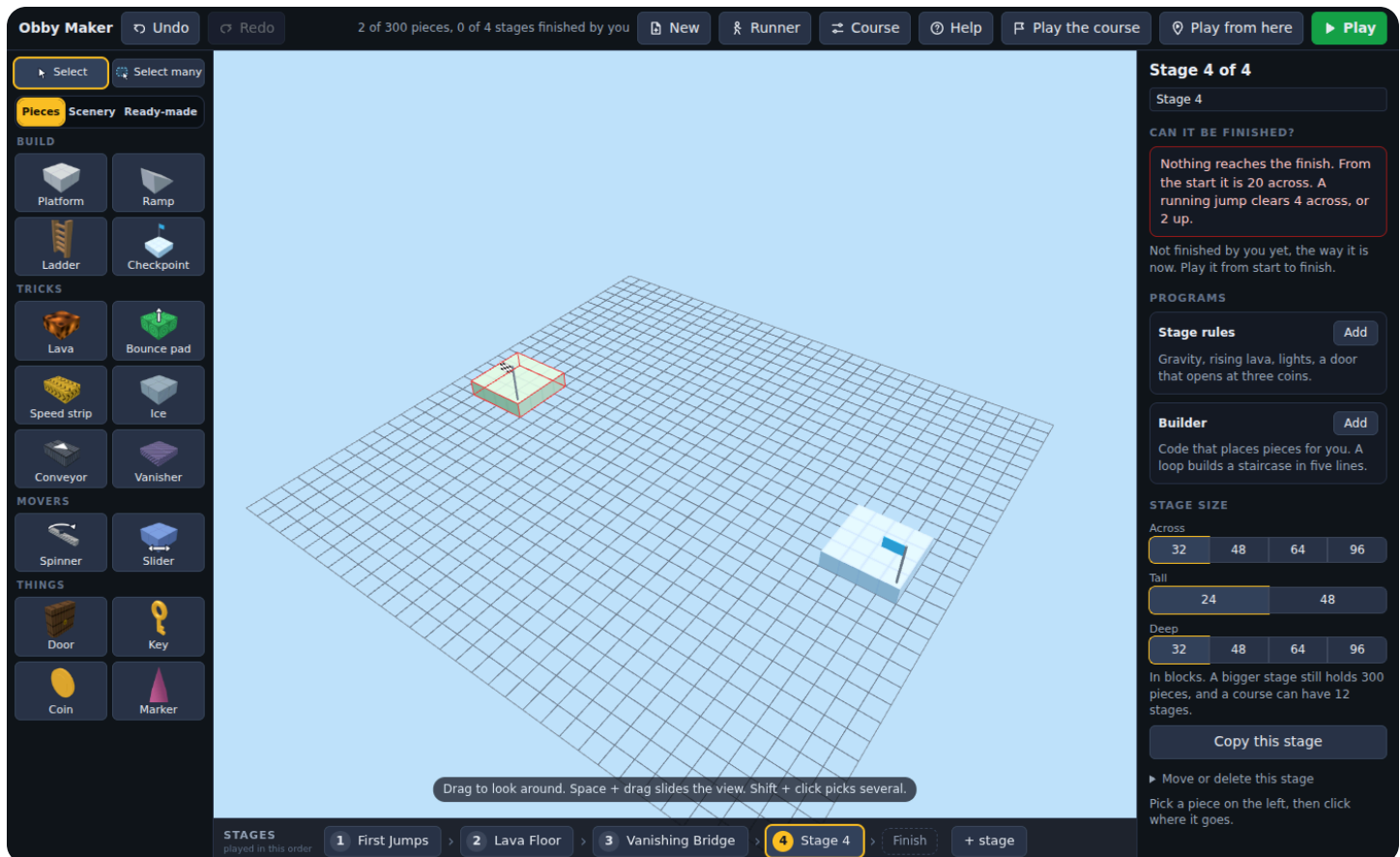
TECHNOLOGY AND PRIVACY

Runs in a current browser with nothing to install. Students need no account and no email: the link works signed out, and nothing they make is stored on our server unless they choose to save it to an account. It draws in 3D, so a very old or slow computer may run it slowly; try it on a student computer first. If your school blocks new sites, ask IT to allow mytekdev.com.

Before you teach: do it once yourself

Build a stage yourself once before class, about ten minutes. You will see exactly what the app tells students.

1. **Open the lesson.** Go to mytekdev.com/try/obby?lesson=build-a-fair-obby&ref=tpt-obby-1. The starter course has three stages along the bottom, under Stages: First Jumps, Lava Floor and Vanishing Bridge.
2. **Play the course.** Press **Play the course** at the top right. Run with the arrow keys or W A S D, jump with Space, and press Esc to stop.
3. **Add a stage.** Press **+ stage** at the bottom. The box under **Can it be finished?** turns red: Nothing reaches the finish. From the start it is 20 across. A running jump clears 4 across, or 2 up.
4. **Place a platform.** Pick **Platform** on the left and click near the start pad. While you place it, the jump arc is blue if the runner can land and red if it cannot.
5. **Find the edge.** Drag the platform away from the start; it moves half a block at a time. The arc stays blue up to a gap of 4 and turns red past it.
6. **Finish it.** Keep adding pieces until the box says The finish can be reached, add a **Checkpoint** before your hardest jump, then press **Play** and run to the finish. The stage's button in the Stages strip now says done.



What every student sees after pressing + stage.

If you see something else: a whole course gone means someone pressed New, which replaces it; Undo brings it back. A stage that never says done was probably played with Play from here, which does not count: use Play and run from the start pad to the finish. Turning on the double jump under Course clears done from every stage, so each one has to be played again.

Background in plain words

An obby, short for obstacle course, is a game where a runner jumps from piece to piece to reach a finish. Game designers separate two kinds of hard. Fair hard is a jump the player can make with practice, so missing it feels like the player's own mistake and trying again feels worth it. Broken hard is a jump nobody can make, however many tries. In this app, with double jump off, a running jump between platforms at the same height clears 4 blocks across or 2 blocks up, so a level gap of 5 is never hard, only broken. Jumping down from a higher platform carries the runner farther: 2 blocks down, a gap of 5 can be made.

A checkpoint is the pad the runner goes back to after a fall. Where it goes decides how much a mistake costs. One placed just before a hard jump means a fall sends the runner back a short way, so the player gets many tries at the hard part without replaying everything before it. The app also checks every stage and says in a sentence whether the finish can be reached, but it cannot tell whether a stage is fun. Only a playtest, watching someone else play it, shows that.

STUDENTS ASK	A GOOD ANSWER
Why can't I make my stage really, really hard?	You can, as long as it stays possible. A jump nobody can make is not hard, it is broken, and players quit.
Why does the arc turn red at 5?	A running jump goes 4 blocks across at most. At 5 the runner cannot reach, so the app warns you before anyone tries.
My gap of 5 works. Is the rule wrong?	Check the heights. The rule is for platforms at the same height. Jumping down carries the runner farther, so the arc can stay blue past 4.
Does a checkpoint make the jump easier?	No. The jump is the same. A fall just costs less, because the runner comes back to the checkpoint instead of the start.
My classmate got stuck. Did I do it wrong?	Not always. Ask yourself whether you meant that jump to be hard. If you did and it is possible, it may be fine. If not, change it.

Lesson sequence

MINUTES	STAGE	WHAT YOU DO	WHAT STUDENTS DO
0 to 7	Warm-up Hook	Show the title, essential question and Today I can slides (about 1 minute). Then have students open the link or scan the QR code on the worksheet and press Play the course, which plays all three stages in order (Play plays only one stage). A short guide runs along the app; tell students to do its first step, then press Esc and wait when they finish. They run with the arrow keys or W A S D and jump with Space; Esc stops. Tell them not to press New: it replaces the whole course (Undo brings it back). Ask: "Which jump was the hardest? Could anyone make it?"	Play the three stages. Remember the jump that sent the runner back the most.
7 to 15	Direct instruction (I do) Model it	Show the vocabulary slide. Then, on the projector, press Esc and press + stage. Read the red sentence under Can it be finished? aloud: nothing reaches the finish, and the finish is 20 across from the start. Pick Platform and place one with a gap of 3 blocks from the start pad. Drag it 1 block farther at a time while the class watches the jump arc: blue at 3 and 4, red at 5. Say the jump rule: a running jump clears 4 blocks across or 2 up, and a gap of 5 never works. Then explain fair hard and broken hard. Pick Checkpoint and show where it goes: just before the hard jump, so a fall there sends the runner back a short way. Point out the one in the course: in stage 2, Lava Floor, the last stepping stone before the bounce pad is a checkpoint.	Watch, and fill in worksheet step 2: the jump rule.
15 to 23	Guided practice (We do) First stage together	Have everyone press + stage at the bottom of the screen. Students who followed the guide already did; they keep that stage and do not press it again. Read the red sentence together: the finish is 20 blocks from the start. Place one platform 4 blocks from the start together, and check that the jump arc is blue. Before you move on, check that every student has at least one platform the runner can reach. Play from here does not count toward done: use Play.	Add platforms one jump at a time, checking the jump arc each time.
23 to 37	Independent practice (You do) Make it yours	Walk the room and ask the questions under What to look for. Repeat the three rules: one jump that is hard but fair, a checkpoint just before it, and play it to the finish until the stage says done.	Sketch the stage on the worksheet, build it, add a checkpoint, and play it to the finish.
37 to 45	Closure Playtest and exit ticket	Students trade seats and play a classmate's new stage for about 3 minutes. The builder watches and says nothing. Then builders go back to their own seats and make one change where the classmate got stuck, or decide it was meant to be hard (about 2 minutes). Ask the essential question again, then hand out the exit ticket.	Play a classmate's stage, then tell the builder where they got stuck. Back at their own stage, change one thing. Answer the exit ticket on their own.

What to look for

Ask these while students work. A student who has understood the lesson can answer them without help:

- How far can a running jump go across? How high?
- Why can nobody make a gap of 5 blocks?

- Show me the jump arc. What does its color tell you?
- Where is your checkpoint, and why there?
- Make this jump harder without breaking it.

The last one is the real test. A student who moves a platform to 4 across, or makes the landing platform smaller, instead of moving it to 5, understands the difference between fair hard and broken hard.

Cross-curricular extensions

- Math: make a table of every jump in your stage, with blocks across and blocks up. Which jump is closest to the rule, 4 across or 2 up? Is it the one you made hard on purpose? (Answers depend on the stage.)
- English: write the rules of your obby for a player who has never played, in three sentences or fewer.
- Art: use the Scenery tab (trees, arrows, lamps) to show the player where to go without any words.
- Computer science: pick a lava piece, then under Program, find When the runner meets it and click Open. Read the line that sends the runner back. Lesson 2 programs a moving platform.

Vocabulary

obby	An obstacle course game. The runner jumps from piece to piece to reach the finish.
runner	The character you move through the obby.
stage	One part of an obby, from a start pad to a finish pad.
checkpoint	A pad the runner goes back to after a fall.
jump arc	The line that shows where a jump lands while you place a piece. Blue lands. Red does not.
fair	Hard, but possible. A player can do it with practice.
playtest	Playing someone's game to find out what works and what does not.
Can it be finished?	The box in the stage panel that says, in a sentence, whether a runner can reach the finish.

Differentiation

ENGLISH LEARNERS

- Post the vocabulary with a picture for each word: the start pad, the finish flag, a checkpoint, the jump arc.
- Model each step on the projector before students try it, and point at the button as you name it.
- Let students answer exit ticket question 3 by pointing to the jump on their screen and showing the change.

STUDENTS WITH IEPs OR 504 PLANS

- Where the IEP allows a modified assignment, the goal is a stage that can be finished; the hard but fair jump becomes an extension.
- Pair students: one builds, one plays each change, then they swap.
- Offer a mouse. If moving the view is hard, press Course and pick Stays behind the runner under

Camera, or press the Camera button while running until it says Camera: behind.

- Read the exit ticket aloud, or let students answer by pointing at their screen.

STUDENTS WHO NEED MORE SUPPORT

- Give a sentence starter for worksheet step 3: "A jump is fair when..."
- Have students click 1 in the Stages strip, press Copy this stage, and change one jump in the copy.
- Check in at minute 28: does the box under Can it be finished? say the finish can be reached?

STUDENTS READY FOR MORE

- Add a second stage with + stage, and make it harder than the first, still fair.
- Turn on the double jump (Course, then Jumping, then Double jump) and build a gap only a double jump can cross: up to 8 across or 4 up. Turning it on clears done from every stage, so play each one again.
- Make the landing platform of the hard jump 1 block wide, and explain why that makes it harder but still fair.

Adapting for other grades

Younger students: For grades 2 and 3, build the first stage together as a class, leave out the checkpoint rule, and score only the first two rubric rows (out of 8; 6 or more meets the objectives).

Older students: For grades 9 to 12, ask for three stages that get harder in order, each with a checkpoint where it is needed, and a short design note: which jump is the hardest, and why it is still fair.

Student worksheet

Name: _____ Date: _____



Open the app: scan the QR code, or go to mytekdev.com/try/obby?lesson=build-a-fair-obby

Essential question: What makes an obstacle course hard but fair?

1. **Play the course.** Press **Play the course**. Run with the arrow keys or W A S D. Jump with Space. Finish all three stages.
2. **Find the rule.** A running jump goes ____ blocks across, or ____ blocks up.
3. **Fair or broken?** A jump is fair when:

4. **Build your stage.** Press **+ stage**. Add platforms until the box under **Can it be finished?** says the finish can be reached.
5. **Play it to the finish.** Press **Play** and run your stage to the finish, until it says **done** at the bottom.

Sketch your stage from the side: the start, each jump, the checkpoint and the finish.

START	JUMP 1	JUMP 2	JUMP 3	FINISH

1. Which jump did you make hard on purpose?

2. Where did your classmate get stuck?

Exit ticket

Name: _____

1. A running jump clears 4 blocks across. A gap of 5 blocks is: (A) hard but fair, (B) easy, (C) impossible: nobody can make it.
2. Why put a checkpoint just before a hard jump? (A) it makes the jump shorter, (B) a fall at the jump sends the runner back a short way, not to the start, (C) it makes the runner jump higher.
3. A classmate's stage has a gap of 5 blocks between two platforms. Name one change that makes the jump fair but still hard.

Exit ticket

Name: _____

1. A running jump clears 4 blocks across. A gap of 5 blocks is: (A) hard but fair, (B) easy, (C) impossible: nobody can make it.
2. Why put a checkpoint just before a hard jump? (A) it makes the jump shorter, (B) a fall at the jump sends the runner back a short way, not to the start, (C) it makes the runner jump higher.
3. A classmate's stage has a gap of 5 blocks between two platforms. Name one change that makes the jump fair but still hard.

Answer key: exit ticket

QUESTION	ANSWER	WHY
1	C	A running jump clears 4 across at most, so a gap of 5 can never be made. That is broken, not hard.
2	B	A fall at the hard jump sends the runner back to the checkpoint just before it, not to the start of the stage.
3	Any change that makes the gap 4 blocks or less: move either platform 1 block closer, or stretch one platform 1 block toward the other	A gap of 4 keeps it hardest. Full credit for any gap from 1 to 4. Adding a checkpoint does not count: it does not make a gap of 5 possible.

Rubric

Score each row from 1 to 4.

Name: _____

CRITERIA	4 EXCEEDS	3 MEETS	2 APPROACHING	1 BEGINNING
Can be finished	The stage says done, and a classmate finished it too.	The stage says done.	The finish can be reached, but the builder has not played it to the finish, so it does not say done.	The box under Can it be finished? still says the finish cannot be reached.
Hard but fair	One jump is hard on purpose, follows the jump rule, and has a checkpoint before it.	One jump is hard on purpose and follows the jump rule, with no checkpoint before it.	Every jump is easy: nothing is hard on purpose.	A jump breaks the jump rule, so nobody can make it.
Uses the playtest	Changed the stage after the playtest, and can say why.	Can say where the classmate got stuck, and whether that was planned.	Can say where the classmate got stuck, but not whether that was planned.	Cannot yet say where the classmate got stuck.

Total: ____ / 12. A score of 9 or more meets the objectives.

Standards

These CSTA 2017 standards describe how programs are made: plan, test, fix, and change after feedback. A stage is a game level, not a program: students place pieces rather than write code. They practice that same process on it. Lesson 2 adds the standards for writing programs.

FRAMEWORK	CODE	GRADES	STANDARD	HOW THE LESSON MEETS IT
CSTA 2017	1B-AP-13	3-5	Use an iterative process to plan the development of a program by including others' perspectives and considering user preferences.	Students sketch a stage, build it, and change it after a classmate plays it.
CSTA 2017	1B-AP-15	3-5	Test and debug (identify and fix errors) a program or algorithm to ensure it runs as intended.	Students play their stage to the finish and fix the jumps that the jump arc and the Can it be finished? sentence mark as out of reach.
CSTA 2017	2-AP-15	6-8	Seek and incorporate feedback from team members and users to refine a solution that meets user needs.	Students watch a classmate play their stage, then change it where it did not work as planned.

Checked October 2026 against: CSTA 2017 progression chart, CSTA 2017 to 2026 crosswalk.

Optional: save student work in a free class

The whole lesson runs at the link on the worksheet, with no accounts and no sign-up. Work stays in the browser tab until it is closed.

To keep students' work, and see every student's obby in one place, make a free class. It takes about ten minutes, once, and covers every lesson in this series: mytekdev.com/tools/class-setup

Students in a class open mytekdev.com/tools/obby-maker/lessons/build-a-fair-obby/start instead of the worksheet link. Each one gets their own copy of the starter, and the same link reopens it next time. A student who started at the worksheet link and then signs up keeps what they made.

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