Clay Shooting

http://o.ooli.ca/en/scratchgames/target

*Shoot at clay targets and see how many you can hit. Games such as first-person shooters, rail shooters, or even Fruit Ninja have a similar design.*

When you load the program, it will have a forest background. There are two sprites: a red frisbee called the "clay" and a red crosshair.

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* The art for the forest background is from Scratch and is licensed under CC BY-SA 2.0. Scratch is developed by the Lifelong Kindergarten Group at the MIT Media Lab.
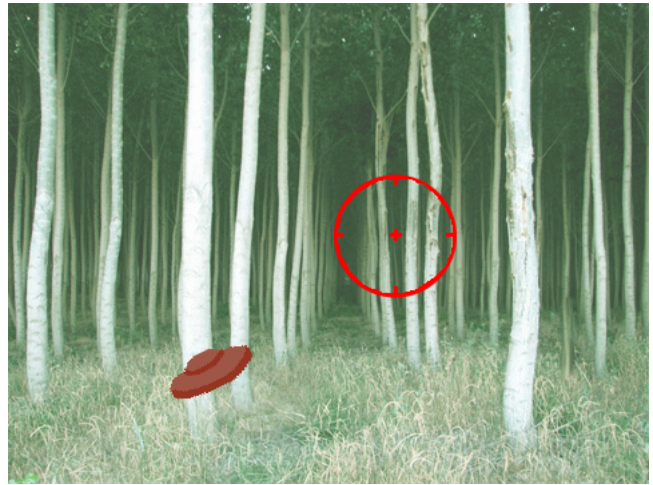
Useful blocks for this exercise

Motion

```
move ( ) steps
point in direction (90▼)
go to [mouse-pointer ▼]
turn ↻ ( ) degrees
go to x: ( ) y: ( )
```

Events

```
when 🚩 clicked
```

Looks

```
switch costume to [clay ▼]
show
hide
```

Control

```
forever
⤷

if < > then
⤷

wait ( ) secs

repeat until < >
⤷
```

Sensing

```
< mouse down? >
< touching [ ▼] ? >
```
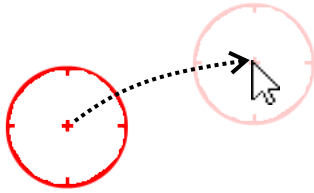
Operators

```
( pick random ( ) to ( ) )
< < > and < > >
```
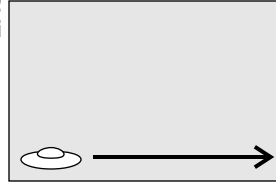
1. Move the Crosshair

In the game, you will use the mouse to show where you want to shoot. Since the crosshair shows where you are aiming, the crosshair should always be under the mouse. Write a program for the crosshair sprite so that it always moves to where the mouse pointer is.

2. Flying Clay

When the game starts, the clay should fly across the screen so you can shoot it. Write a program so that when the green flag is clicked, the clay will start in the lower left of the screen. Use the position x=-200 and y=-125 for the lower-left of the screen. Then, have the clay move across the screen.

3. Shooting

Right now, when you shoot the clay, nothing happens. Let's change that. If you click on the costumes tab of the clay sprite, you will notice that there are two costumes: the normal clay, and clay fragments.

Change the program for the clay so that if you shoot it, it will break up into fragments. When the clay moves, it should check if the mouse button is being pressed down and the mouse is touching the clay. If that happens, it means the clay was hit. If it gets hit, the clay should change its costume to the "fragments" costume to show it was hit.

When the game starts, the clay hasn't been hit yet, so the clay should set its costume to the normal "clay" costume when the green flag is clicked.

4. Play Again?

Now, when the game starts, the clay moves across the stage and then stops at the side. Change the program so that when the clay touches the edge of the screen, it goes back to the start.

Don't forget to reset the costume of the clay when it goes back to the start as well.

5. Different Directions

Right now the clay always moves in the same direction. Change the program so that before it starts moving, it points in a different direction. Since 90 is right and 0 is up, you should pick a random number between 0 and 90 for the direction.

0

45

direction

90
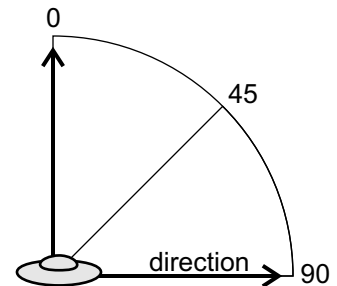
6. No Cheating

Since the clay always starts at the lower-left of the stage, players can cheat and just always aim in the lower-left. One way to stop this is to hide the clay and wait for a few seconds before it moves. The amount of time it waits should be different each time. That way, players can't be sure when the clay will appear.

More Ideas

Can you keep track of how many clays were hit and how many clays were missed? Can you add sound effects to the game?