



# Scratch Invaders 4



Register/login at <https://scratch.mit.edu>

*Defensive shields – Shields take damage from the invader's bombs. This is hard to create with sprites, so use pen graphics to achieve this effect.*

1) Add the Pen extension



2) Download *invader* images from:

<https://codeclub67.github.io/images/invader.gif>

3) Create a new **shield** sprite from the *invader* images, and select the shield costume.

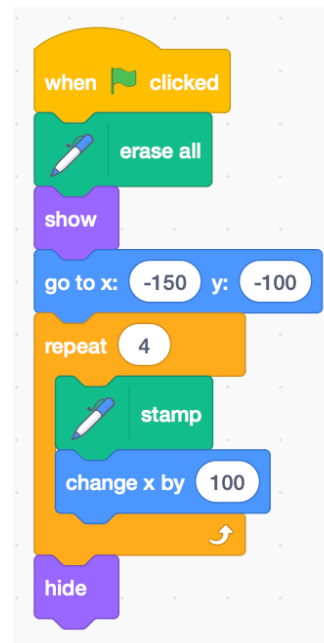


*So that you can draw over the shields, stamp them onto the screen with the pen.*

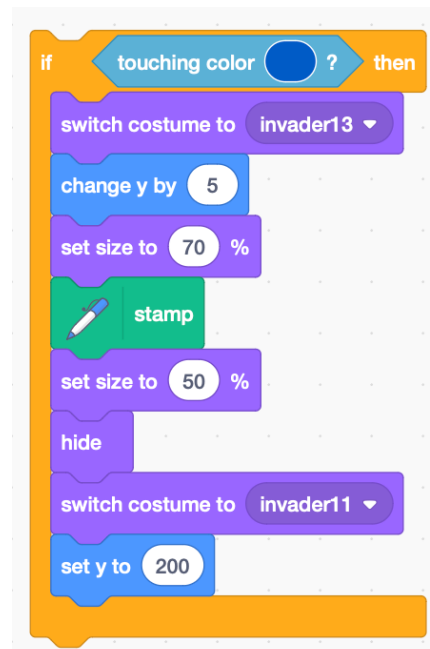
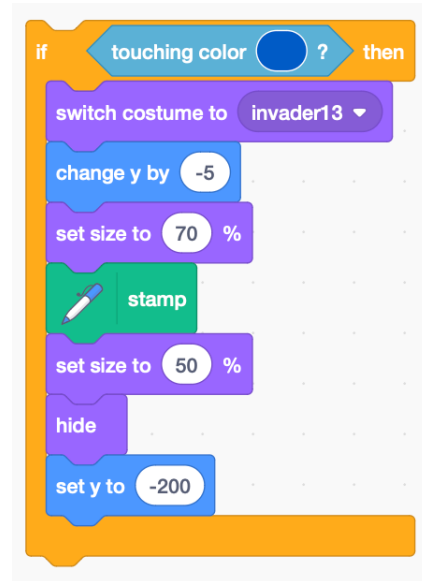
4) Add code to the **shield** that **stamps** four shields near the bottom of the screen, 100 pixels apart, then hides the original sprite.

*Make the existing missiles and bombs interact with the shields. You need to detect the shield **colour** rather than the sprite itself.*

*Run your code so that you can see the shields on-screen.*



- 5) Add code to the alien bomb to detect when it's **touching** the missile colour. Add this inside the repeat loop that makes the bomb drop.
- 6) To get an exact colour match, click on the colour swatch in the **touching colour** block. Select the colour picker at the bottom of the pop-up, and use it to get the exact shield colour.
- 7) **Switch to costume** invader13, a black hole **stamped** on top of the shield. It merges with the black background.
- 8) When the bomb hits the shield, move it down slightly (**change y**), and make it slightly larger (70%) to take a bigger chunk out of the shield.
- 9) Add similar code to the **missile** that shoots upwards and can hit the shields from below. Add this inside the main loop that makes the missile rise.
- 10) Remember to move the impact point slightly up this time.
- 11) Switch back to the missile costume, and move it to the edge to exit the loop.



*Save your code.*