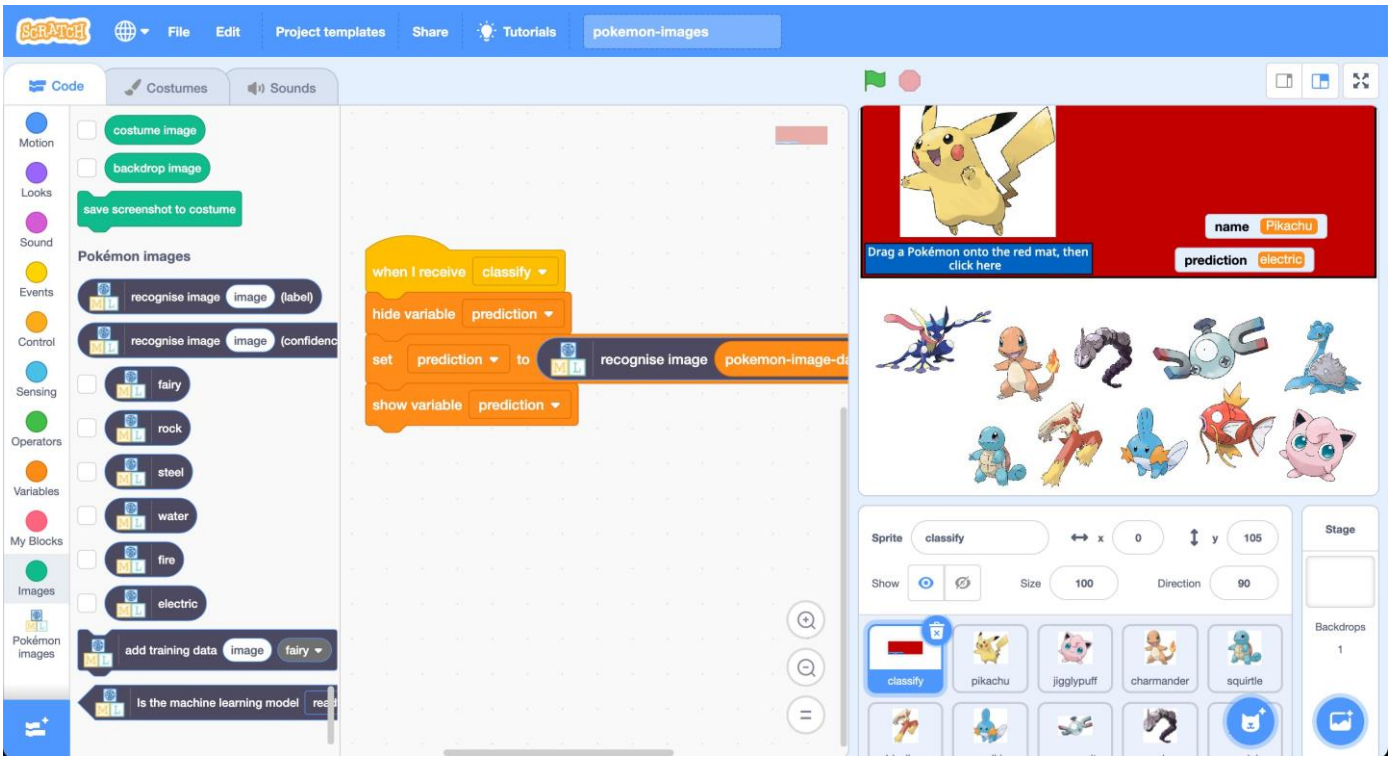
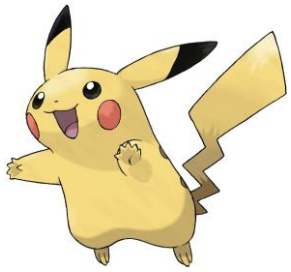
Pokémon images

In this project you will train a computer to predict the type of Pokémon based on how they look.

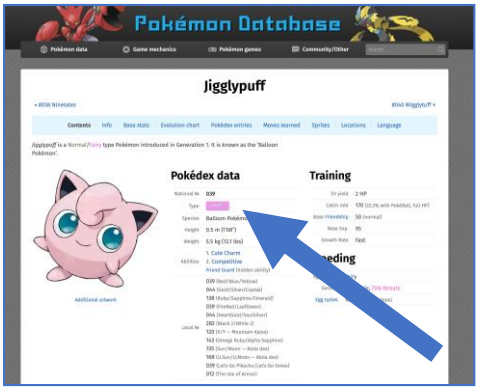




This is Pikachu.

Pikachu is an **electric** Pokémon.

There are lots of different types of Pokémon.

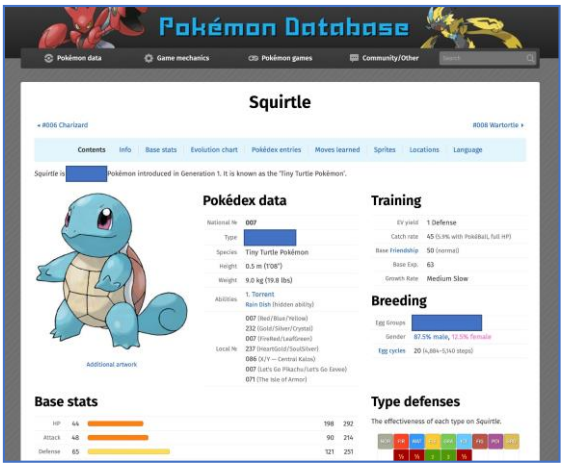


Jigglypuff is a **fairy** Pokémon.

Check the types of other Pokémon in the Pokémon database at https://pokemondb.net

The types of Pokémon are:

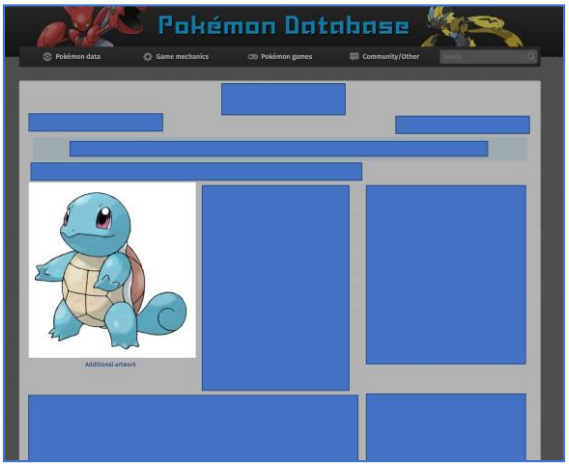
- Normal
- Grass
- Ground
- Rock
- Fire
- Ice
- Flying
- Ghost
- Steel
- Water
- Fighting
- Psychic
- Dragon
- Fairy
- Electric
- Poison
- Bug
- Dark



What type of Pokémon is Squirtle?

Try to guess.

What information do you think you could use to guess the type?



Would you use the way that it **looks**?

Do you think the colors and the shapes would give you a good clue for what the type is?

Would you use the **statistics** that describe the Pokémon's size, abilities, and fighting style?

Do you think those numbers would give you a good clue for what the type is?

Neither is perfect.

There aren't rules. But we can learn what they have in common and use this to make a guess.

Computers can do this. Computers can work without relying on rules, by learning what things have in common and using this to make predictions.

We call this type of computing **Machine Learning**.

In this project, you will train a computer to be able to predict the type of a Pokémon based on how it looks, by training it with pictures of a hundred example Pokémon. This is exactly **Deep Learning**.

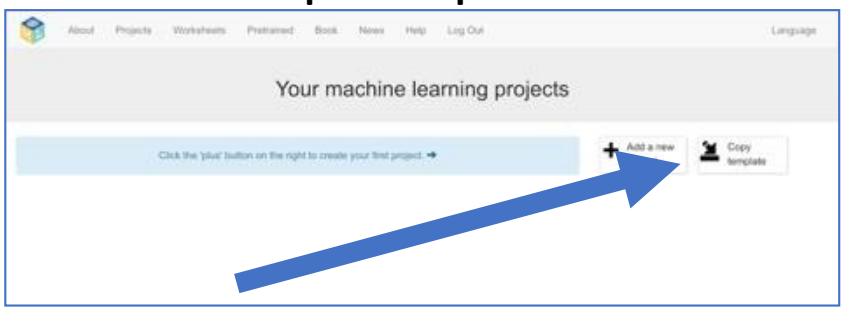
To make things a little quicker, we won't train the computer to recognize every type of Pokémon, we'll just focus on six of the types as an example.

1. Go to https://machinelearningforkids.co.uk/ in a web browser

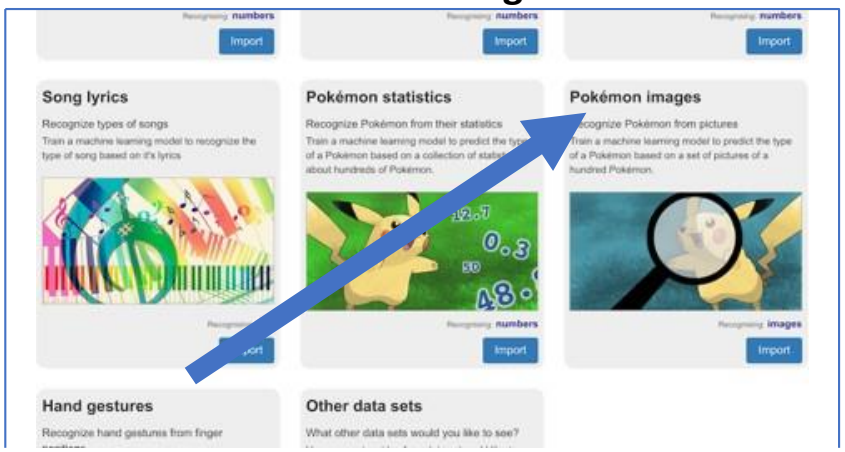
2. Click on "**Get started**"

3. Click on "**Try it now**"

4. Click on "**Copier template**"

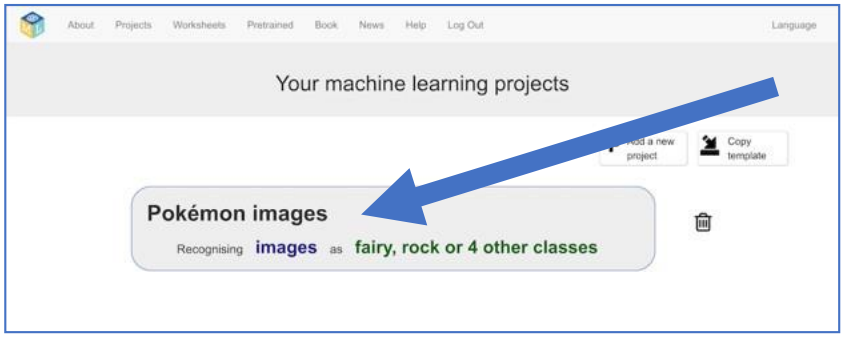


5. Click on **"Pokémon images"**

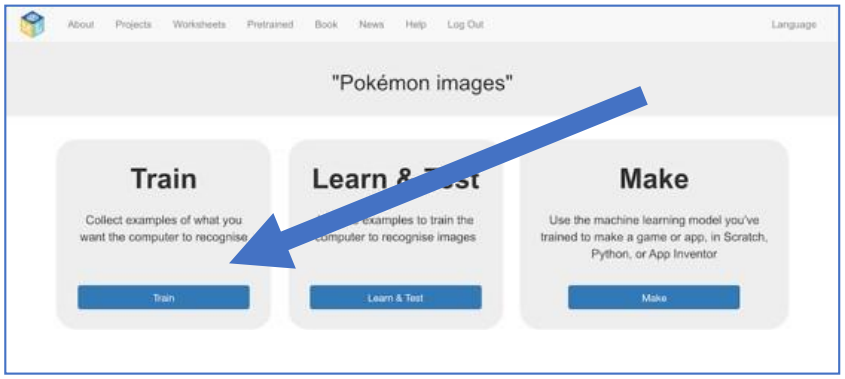


6. Click on "**IMPORT**"

7. Click on "**Pokémon images**"



8. Click on “**Train**”



9. Look through the training images

How many images do you have?

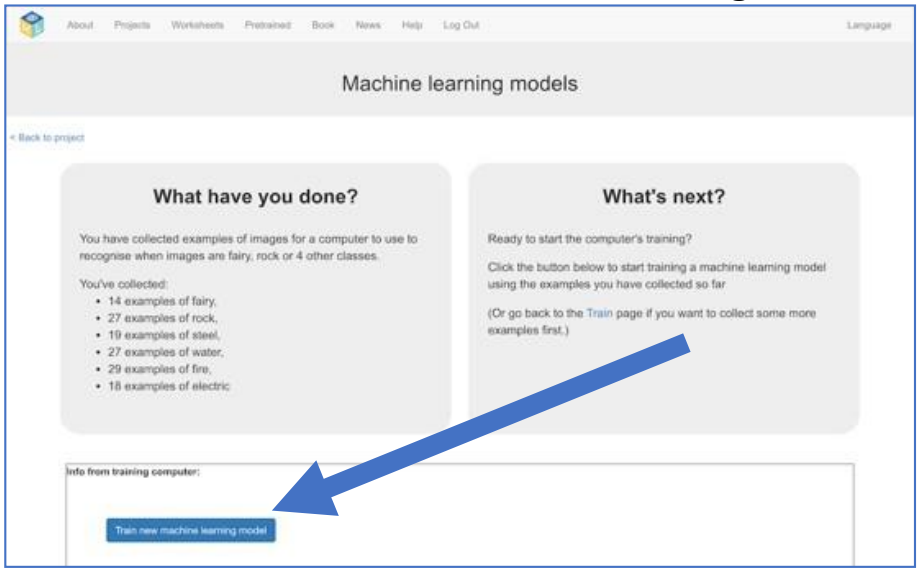
How many classes do you have?

10. Click on “**Back to project**”

11. Click on “**Learn & Test**”

What have you done exactly?

12. Click on “**Train new machine learning model**”

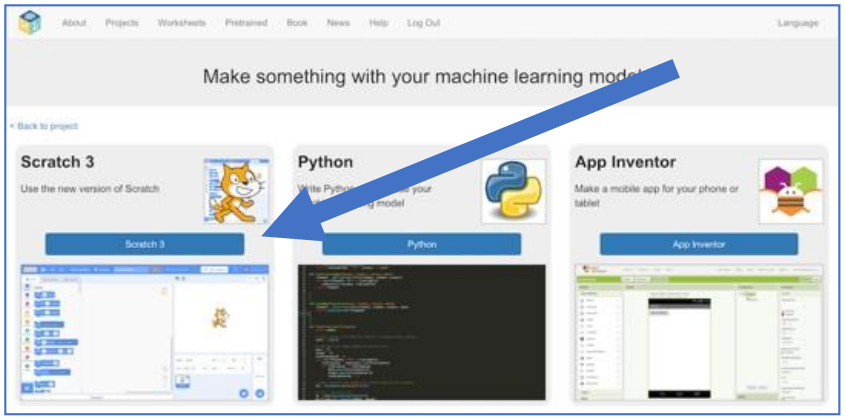


When it’s done you can challenge your model by using a image or the camera of your computer. Feel free to grab a Pokemon picture on Google and try it.

13. Click on “**Revenir au Projet**”

14. Click on “**Faire**”

15. Click on “**Scratch 3**”

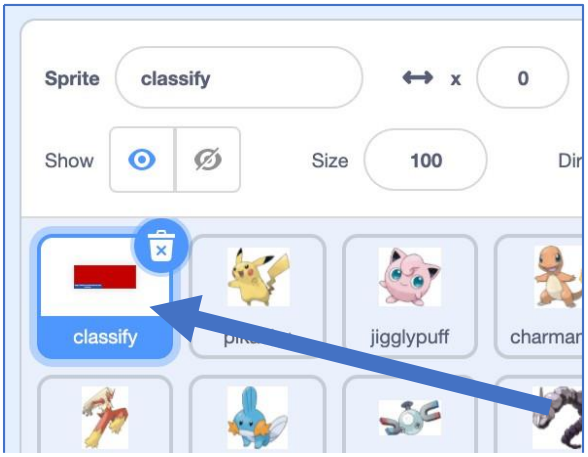


16. Click on “**Ouvrir en Scratch 3**”

17. Click on “**Modèles de projet**”

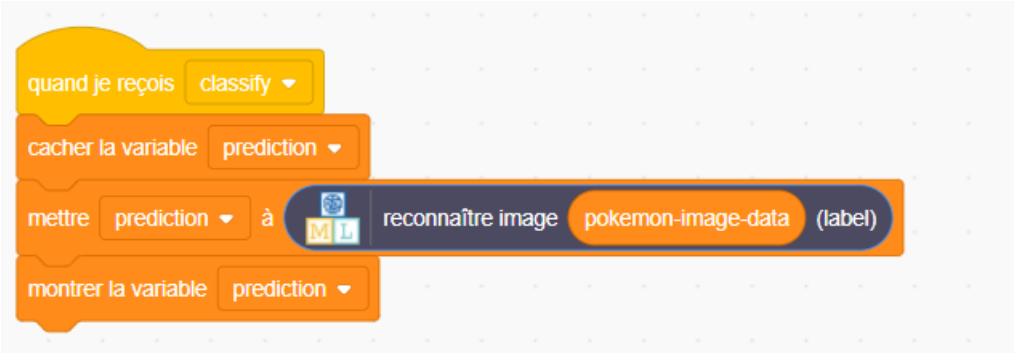
18. Click on “**Pokémon images**” at the bottom

19. Click on the “**classify**” sprite

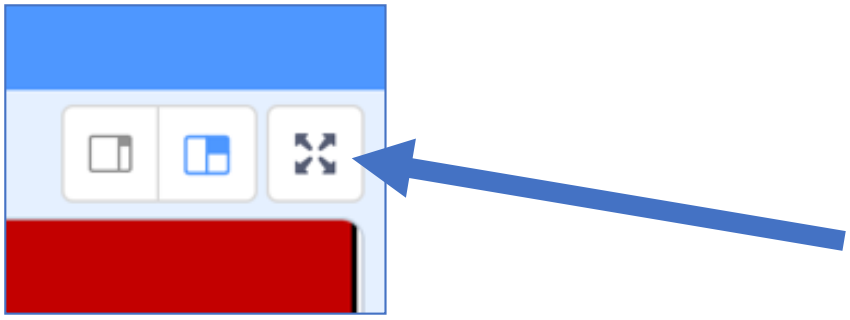


20. Find the "**when I receive classify**" code

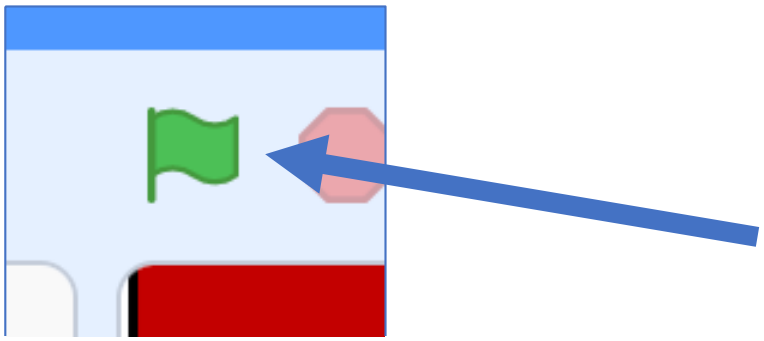
21. Update the code to use your machine learning model



22. Click on the "**full-screen**" button



23. Click on the "**Green Flag**"



What have you done so far?

You've used pictures of a random sample of a hundred Pokémon to train a computer to be able to predict the type of a Pokémon from a picture. You've set up a Scratch project that can use your machine learning model.

Next, you'll test your model to see how good it is at guessing the type of new Pokémon.

Are these Pokémon were included in the training data? Verify it.

Why do you think this is important?

If you want to test with more Pokémon, you can find more images at https://pokemondb.net

Try testing your model to see what mistakes it makes.
If you find a mistake, look at your training examples again to try and think of a reason for the mistake.