



# Storyteller

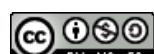
In this project you will use a language model to generate stories. You will use the same sort of artificial intelligence technology that powers tools like ChatGPT.

*This project assumes you already understand the basics of how language models work.*

*If you haven't already completed the "Language Models" worksheet, you will understand this project better if you do that worksheet before this one.*

The image shows a Scratch project titled "storyteller". The stage features a knight sprite walking along a path in a medieval setting with a castle in the background. A speech bubble from the knight contains generated text: "There once lived a brave knight named Sir Reginald within a bustling medieval castle called Acorn Hill Castle." The script on the script editor consists of the following blocks:

- When green flag clicked:
  - clear context
  - ML is the language model | ready to use
  - Set start prompt 1 to [Tell me a story!]
  - Set start prompt 2 to [I want a happy story, with brave characters, set in a medieval castle.]
  - Set start prompt 3 to [Give me the story one sentence at a time.]
  - Set start prompt 4 to [When I'm ready for the next sentence, I will say "next"]
  - Say [ML] submit [join [start prompt 1] [join [start prompt 2] [join [start prompt 3] [start pro
- When right arrow key pressed:
  - Say [ML] submit [next] using temperature [high (1.0)] and top-p [high (1.0)]
- When down arrow key pressed:
  - Set end prompt 1 to [The story is long enough now.]
  - Set end prompt 2 to [Bring the story to a happy ending in the next few sentences.]
  - Set end prompt 3 to [I still want you to give me one sentence at a time, waiting for me to say "next"]
  - Say [ML] submit [join [end prompt 1] [join [end prompt 2] [join [end prompt 3] [using temperat



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If you are under the age of 13, please only use a small language model with supervision from a trusted adult.

Generative AI can sometimes generate text that isn't nice or appropriate.

1. Go to <https://machinelearningforkids.co.uk/>
2. Click on “Get started”
3. Click on “Log In” and type in your username and password  
*If you can't remember your username or password, ask your teacher or group leader to reset it for you.*
4. Click on “Projects” on the top menu bar
5. Click the “+ Add a new project” button.
6. Name your project “Storyteller” set it to learn how to generate text.  
Click **Create**

The screenshot shows a web-based form for creating a new machine learning project. At the top, there's a navigation bar with links for About, Projects, Worksheets, Pretrained, Stories, Book, Help, and Log Out. On the right side of the header is a Language selection dropdown. Below the header, the main title is "Start a new machine learning project". The form fields include:

- Project Name \***: The input field contains "storyteller".
- Project Type \***: The dropdown menu is set to "generating text" (Beta).
- Language**: The dropdown menu is set to "English".
- Storage \***: The dropdown menu is set to "In your web browser".

A large blue arrow points from the "storyteller" input field down towards the "CREATE" button at the bottom right. To the right of the "Project Type" dropdown, there's a tooltip box titled "What do you want to teach the computer to do?". It lists several options:

- To recognise words, sentences or paragraphs, choose "recognising text"
- To recognise photos, diagrams or pictures, choose "recognising images"
- To recognise sets of numbers or multiple choices, choose "recognising numbers"
- To recognise voices or sounds, choose "recognising sounds"
- To predict numbers, choose "predicting numbers"
- To generate new text with a language model, choose "generating text"

At the bottom right of the form are two buttons: a blue "CREATE" button and a white "CANCEL" button.

7. You should see your new project in the projects list. Click on it.

## 8. Click on Small, and then click Next

The screenshot shows a web-based application for preparing a language model. At the top, there's a navigation bar with links for About, Projects, Worksheets, Pretrained, Stories, Book, Help, and Log Out. On the far right, there's a Language icon. The main title is "Prepare a language model". Below it, a message says: "If you are under the age of 13, please only use a small language model with supervision from a trusted adult. Generative AI can sometimes generate text that isn't nice or appropriate." A large callout box contains the text: "Type of language model" with three options: Toy, Small (which is highlighted in blue), Large, and "language model". Below this, a paragraph explains that computers look for patterns in large numbers of documents. It says: "Computers can look for patterns in large numbers of documents. Language models generate text by using those statistical patterns to predict what word could come next. Creating a **toy** language model will show you how this works, and see the types of patterns computers look for (in documents you choose yourself). Configuring a **small** language model will show you how to use patterns found in millions of documents. All of this will help you to understand how **large** language models work in the real world." At the bottom right of the callout box is a "Next" button.

## 9. Choose a model architecture

The screenshot shows the same "Prepare a language model" interface. The "Type of language model" section is visible again, with the "Small" button highlighted. Below it, a new section titled "Model architecture" is shown. This section lists several pre-trained models: Smol, Qwen, Tiny Llama, Llama, and Phi. A blue arrow points to the scrollable list of models.

*There are multiple models to choose from.*

*"SmolLM2" (made by Hugging Face) – 276 MB download*

*"Qwen 2.5" (made by Alibaba) – 289 MB download*

*TinyLlama (made by Singapore Uni. of Technology & Design) – 625 MB download*

*Llama 3.2 (made by Meta) – 711 MB download*

*Phi 1.5 (made by Microsoft) – 806 MB download*

*Gemma 2 (made by Google) – 1.5 GB download*

*The larger models can generate better text, however they:*

- \* *will take longer to download*
- \* *will need more storage space on your computer*
- \* *will need a faster and more powerful computer to run*

*You can change your choice later if you don't like the responses you get.*

## 10. Click Download

## 11. Set the context window size to 512, and click Next

The screenshot shows the 'Prepare a language model' interface. At the top, there's a navigation bar with links for About, Projects, Worksheets, Pretrained, Stories, Book, Help, and Log Out. On the right, there's a 'Language' dropdown. Below the navigation, a message says: 'If you are under the age of 13, please only use a small language model with supervision from a trusted adult. Generative AI can sometimes generate text that isn't nice or appropriate.' A large blue arrow points to the 'Size of context window' input field, which contains the value '512'. To the right of the input field is a tooltip explaining: 'How much text the model looks at before generating the next word. A smaller window means it works with less previous text. A larger window allows it to use more, which can make responses more accurate but needs more computer memory.' At the bottom right is a 'Next' button.

## 12. Set a high temperature and Top-p value

The screenshot shows the 'Prepare a language model' interface. It includes fields for 'Type of language model' (set to 'language model'), 'Model architecture' (set to 'Llama'), and 'Size of context window' (set to '512'). At the bottom, there are two horizontal sliders: 'Temperature' and 'Top-p'. Both sliders have arrows pointing to the 'high' end. Each slider has a 'Review' button at its right end. A large blue arrow points from the 'Size of context window' field down to the 'Temperature' slider.

## 13. Click Next

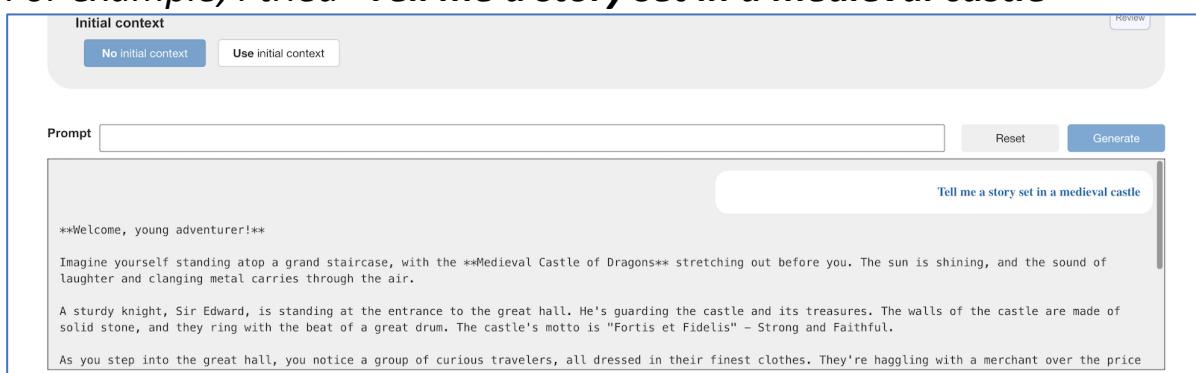
## 14. Select No initial context



## 15. Click Next

## 16. Type a prompt asking for a story

*For example, I tried “Tell me a story set in a medieval castle”*



## 17. Click on Reset

## 18. Try the same prompt as before

*With a high temperature and Top-p value, you should get different responses each time*



## 19. Experiment with different prompts to get the type of story you like. Does it help if you give longer, more specific instructions?

## 20. When you are happy with your prompt, click the **Scratch 3** button

Initial context  
No initial context Use initial context Review

Prompt [ ] Reset Generate

Inside the castle, the hallways were lined with books, scrolls, and strange, shimmering artifacts. The knights and men-at-arms resided in the battlements, singing tales of valor and bravery. The castle's beehive, a hive of buzzing bees, collected honey and waxed hairpins.

One day, a brave young apprentice, Erminia, rode into the castle, her heart full of stories and her mind buzzing with curiosity. She sought the counsel of her wise mentor, the Countess Aurora.

As they strolled by the great hall, they admired the Galleon Attractive Tablecloth over tournaments. The table was strewn with croquet mallets, double clubs, and a curious smile! The Countess whispered to Erminia, "You must keep your best kindness to the Martin The Fairy King."

What story would you like to hear next, brave one?

**Scratch 3**  
Use your language model Scratch Scratch 3

## 21. Create the following code

*Use your prompt instead of mine*

```
when green flag clicked
  say [Tell me a story set in a medieval castle v] using temperature [high (1.0)] and top-p [high (1.0)]
```

## 22. Click on the Green Flag to test

*The story will probably be too long to fit in a Scratch say bubble.*

Welcome to Castle Ravenwood! Here's a tale just for you:

In the midst of a sunny afternoon in the year 1348, you enter a grand hall with a tall, stone staircase leading to the upper floors. The air is filled with the sweet scent of fresh bread wafting from the kitchen. Discreetly concealed windows allow the warm sunlight

Sprite Sprite1 Stage

Show Size Direction Backdrops

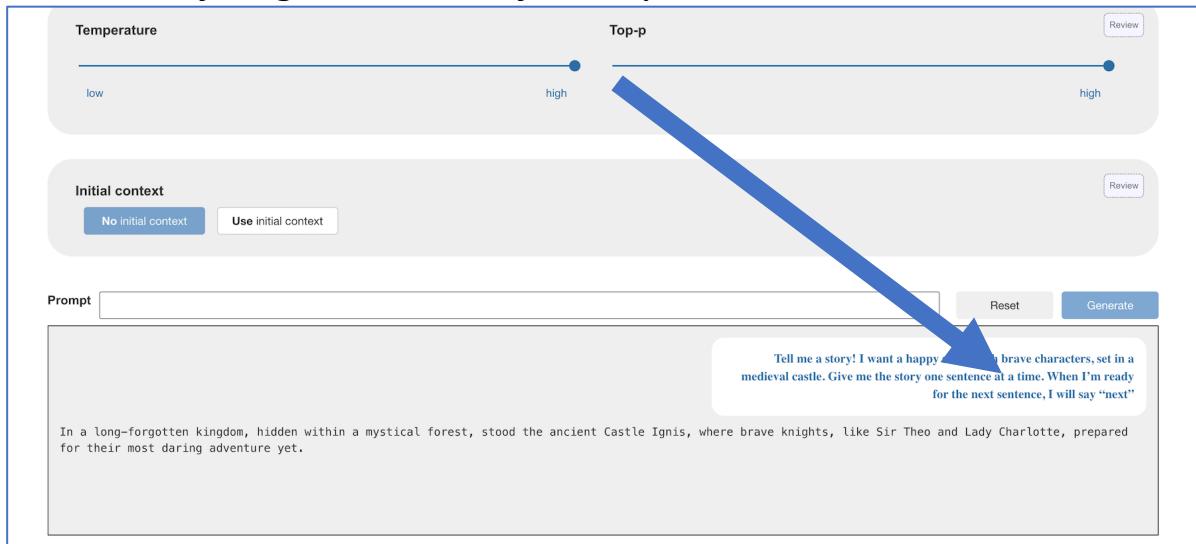
1

**23.** Close the Scratch window to go back to the training tool

**24.** Try asking the model for a story one sentence at a time. Tell the model that you want to ask for the next sentence. For example:

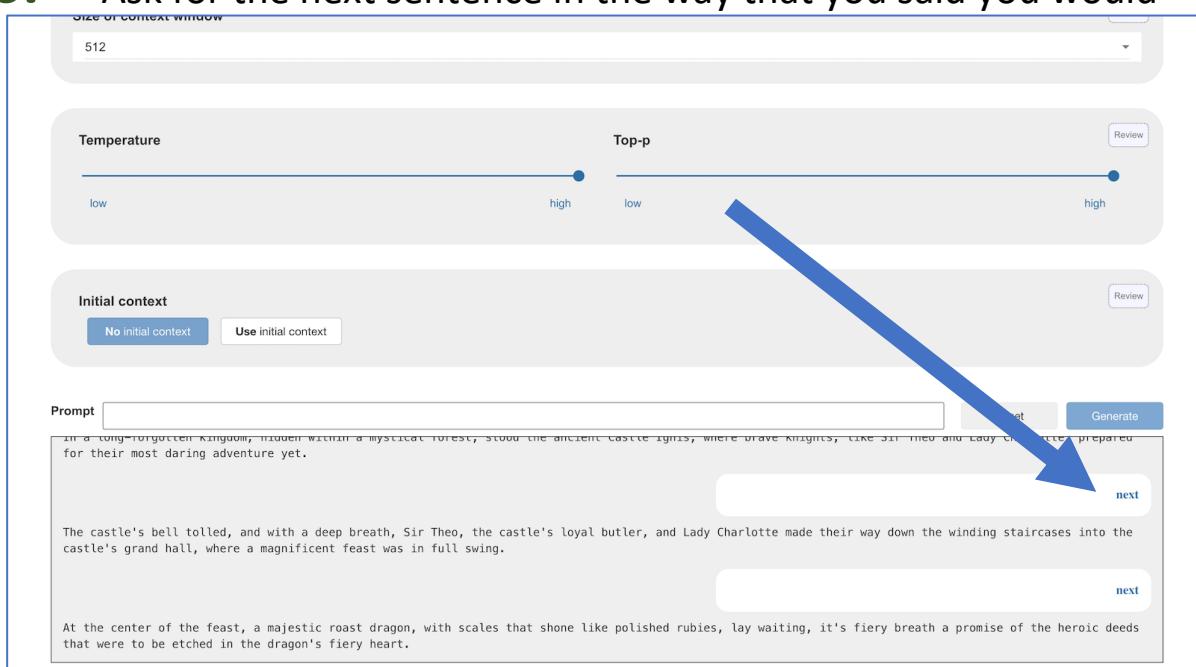
**Tell me a story! I want a happy story, with brave characters, set in a medieval castle. Give me the story one sentence at a time. When I'm ready for the next sentence, I will say "next"**

*You should just get the start of a story this time.*



**25.** Use the **Reset** button and try different ways of asking

**26.** Ask for the next sentence in the way that you said you would



## 27. Keep going!

Prompt  that were to be etched in the dragon's fiery heart.

Reset Generate

next

Just as Lady Charlotte, remembering her duty to translate the ancient tomes upon the tables' offerings, inspects her delicious dish of roasted dinosaur sausage and abraxas greens, a faint rustling sound comes from beneath the golden-brown blanket's golden rim.

next

A small, puzzled figure with a wild shock of curly blue hair pops out from beneath it, revealing that it's none other than Jacques, the castle's mischievous and magical kitchen assistant, who looks up with big, round, begging eyes and exclaims, "Imagine y'can do it!"

28. The text window shows the current “**context**” – which is like the model’s memory. The “**context window**” contains all the information the model is using to generate new text.

If you fill the context window, older text is removed. Once your story has got long enough, your original prompt will be removed.

Scroll to the top of the chat and check if your original prompt is still there. *Keep asking for the next sentence until it vanishes.*

Prompt  In a long-forgotten kingdom, hidden within a mystical forest, stood the ancient Castle Ignis, where brave knights, like Sir Theo and Lady Charlotte, gathered for their most daring adventure yet.

Reset Generate

next

The castle's bell tolled, and with a deep breath, Sir Theo, the castle's loyal butler, and Lady Charlotte made their way down the winding staircases into the castle's grand hall, where a magnificent feast was in full swing.

next

At the center of the feast, a majestic roast dragon, with scales that shone like polished rubies, lay waiting, its fiery breath a promise of the heroic deeds that would be re-enacted in the dragon's dining hall.

29. What happens if you ask for another sentence now?

*The model no longer has your original prompt in the context to know why you're saying “next”.*

*If you're lucky, the model might be able to infer the intention of the **next** command from previous interactions, but most likely it will result in something unexpected!*

Prompt  tempered greatness capable sine assortment Learning polished watts str Az button Children masterpiece glanced Sheriff economical sustainable gen regiment ind hic hic

Reset Generate

next

Let's try again, let's refocus on the kingdom of Everwood. Lucas and Black Talon are being extra cautious, and they want to to

next

...pick a trusted adult to talk to one-on-one with them and not share any personal info with you. They know that in Everwood, friends can be honest and open about their their

*Choosing a context window size of 512 tokens means you won't be able to generate very long stories!*

## 30. Choose a larger context window

*The larger the context window, the better.*

*This is more complex for your computer to run.*

*If your computer isn't powerful enough for a very large context window you will get an error. If that happens, choose a smaller option.*

A screenshot of the Model Architecture interface. At the top, there's a dropdown menu labeled "Model architecture" with "Llama" selected. Below it is a dropdown menu for "Size of context window" with the value "16384" highlighted. A large blue arrow points from the text above to this dropdown. Further down are two horizontal sliders: "Temperature" (set to "high") and "Top-p" (set to "low"). Each slider has "low" at the left end and "high" at the right end, with a central dot indicating the current position.

## 31. Try again, and see how far the story goes

A screenshot of the Story Generation interface. It features several input fields and controls. At the top is a dropdown for "Size of context window" set to "16384". Below it are two sliders: "Temperature" (set to "high") and "Top-p" (set to "high"). Under these are buttons for "Initial context" ("No initial context" is selected) and "Review". At the bottom is a "Prompt" field containing "next". To the right of the prompt is a "Reset" button and a "Generate" button. A text box displays the generated story:  
Once upon a time, in a small medieval village nestled in the rolling hills of a far-off kingdom, there was a young apprentice girl named Sophia who dreamed of becoming a great knight like her uncle, Sir Edward.  
  
She practiced her sword fighting skills in secret nights beneath the village castle, where she'd watch the lord and his knights in their formal finery, their hands clasped in a symbol of solidarity, but also of friendship and camaraderie, as long as they didn't put anyone in harm's way.

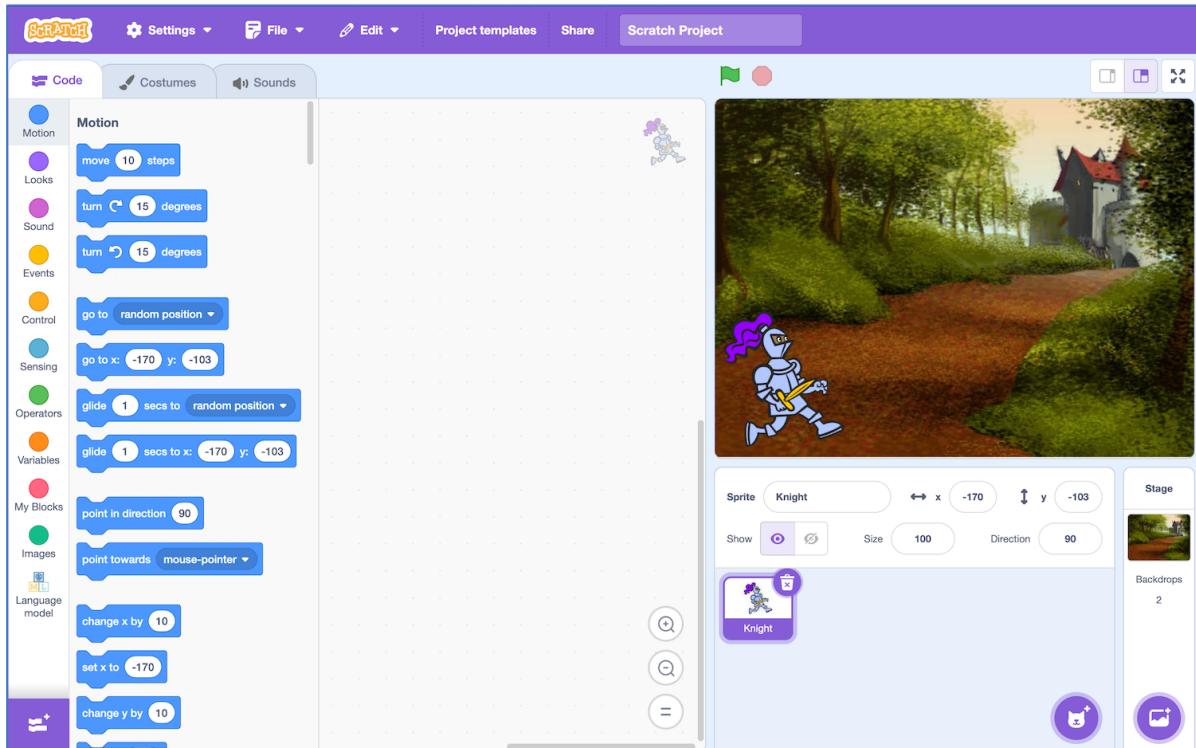
## 32. If you want the story to come to an end, ask for that.

A screenshot of the Story Generation interface. The "Prompt" field contains "next". A large blue arrow points from the text above to this field. The story text box shows the beginning of a tale about Sophia and the dragon. To the right, a message box contains: "The story is long enough now. Bring the story to a happy ending in the next few sentences. I still want you to give me one sentence at a time, and wait for me to say "next" before each sentence." At the bottom of the story text box, another message box says: "As the battle raged on, Sophia bravely joined the Steel Thieves, and together, they emerged victorious, with the dragon defeated and the farmable oasis of Alderan prospering once again, filling Sophia's heart with an extraordinary sense of pride and understanding that, amidst safety and possibility, a priceless true strength was truly well drowned."

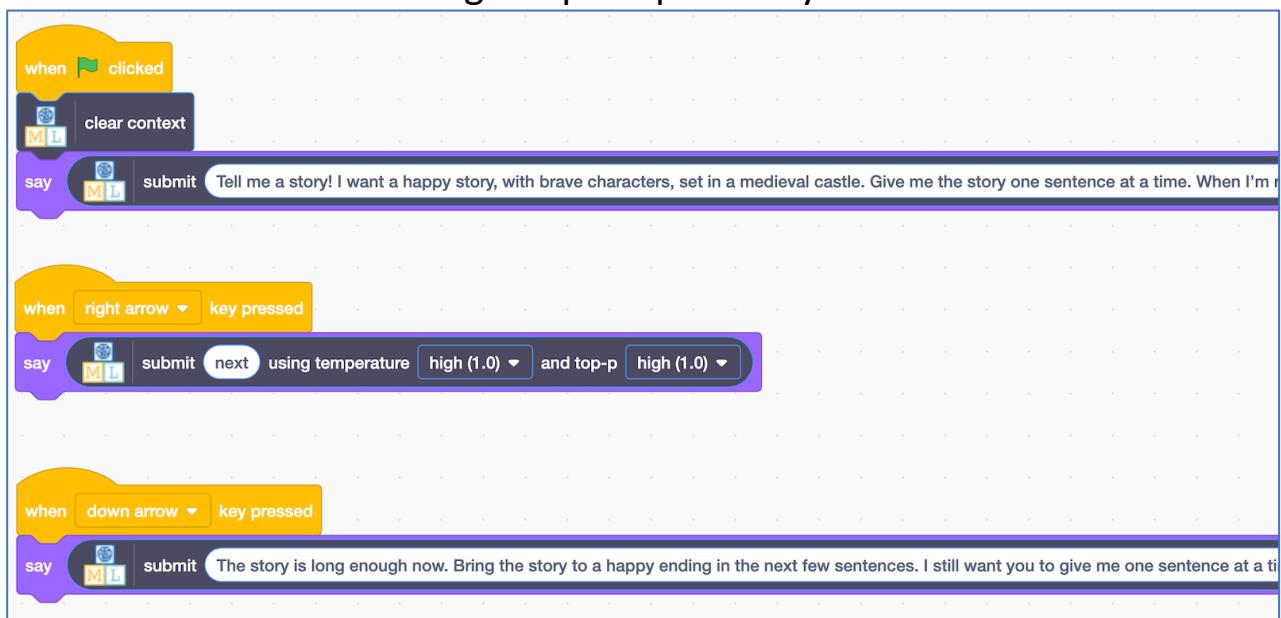
**33.** Click on the **Scratch 3** button again

**34.** In the Scratch window that opens:

- choose a **backdrop** suitable for your story
  - choose a sprite **costume** suitable to be your storyteller
- You can draw these yourself if you prefer! Be creative!*



**35.** Create this code using the prompts that you've tested

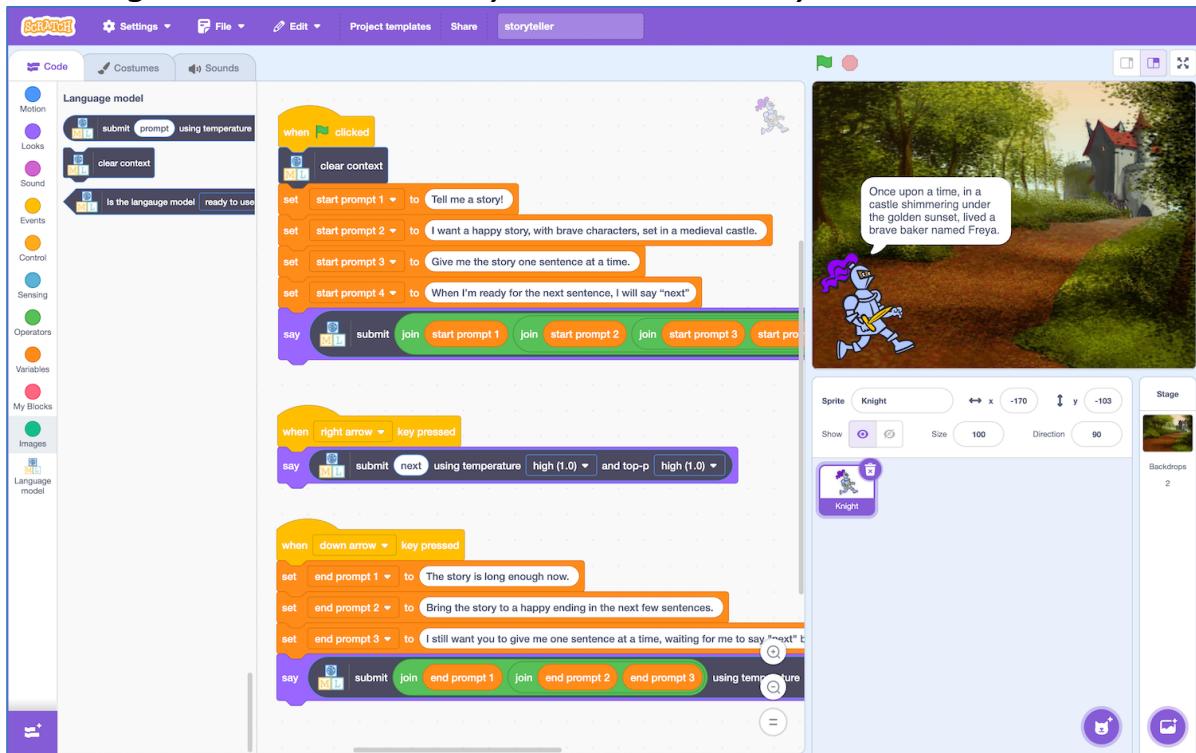


## 36. Test your project

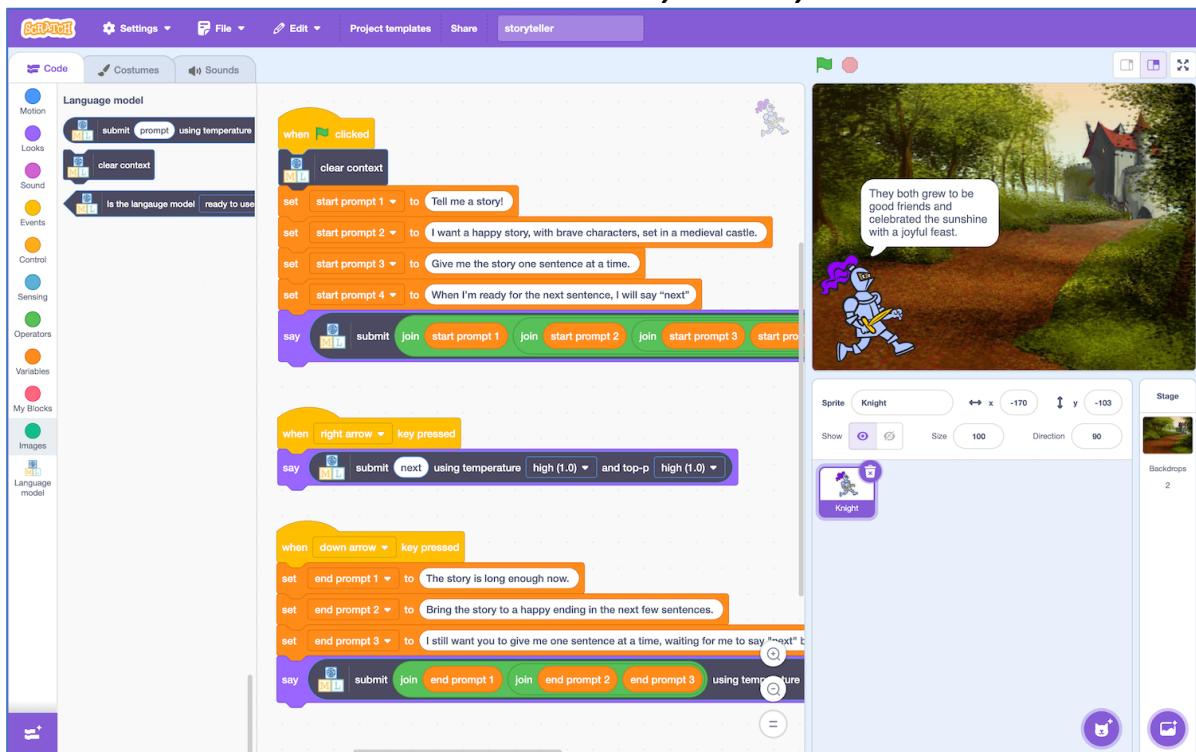
**Clicking on Green Flag will start a new story**

**Pressing the right arrow key will get the next bit of the story**

**Pressing the down arrow key will end the story**

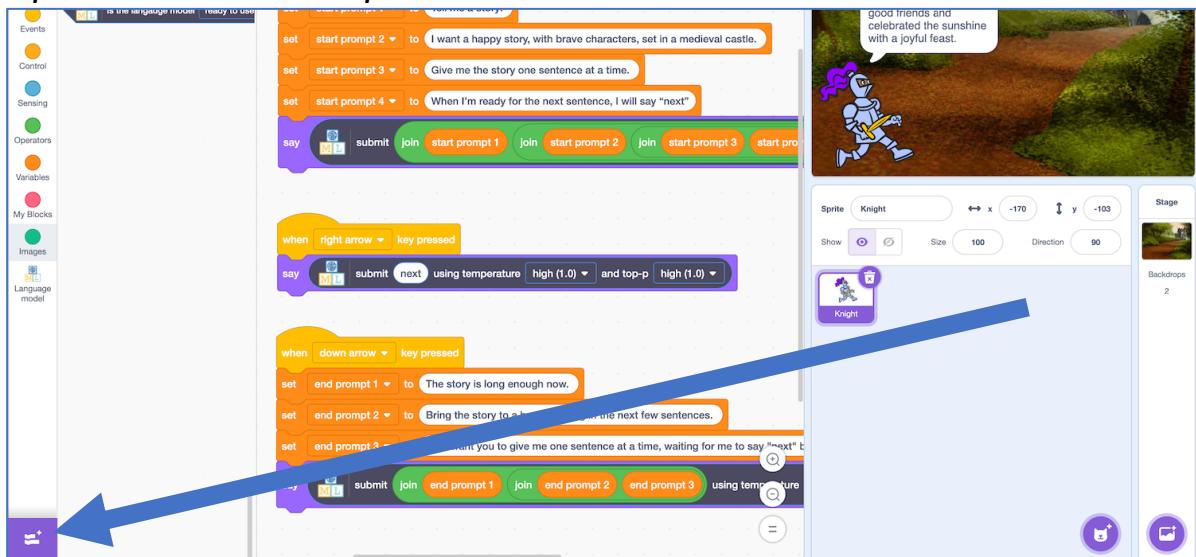


*Check that the model can end the story when you ask*

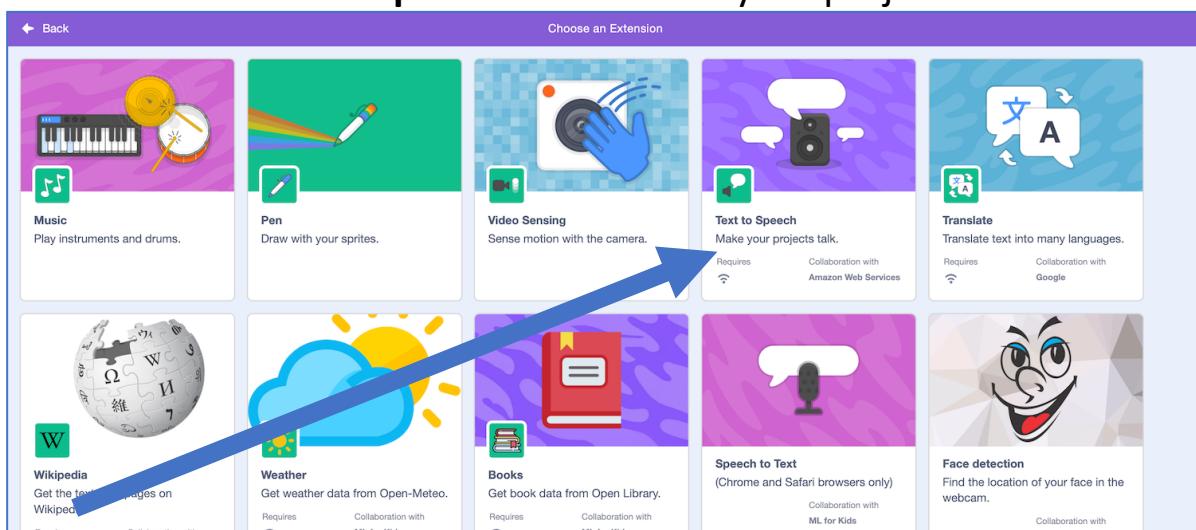


## 37. Give your storyteller a voice!

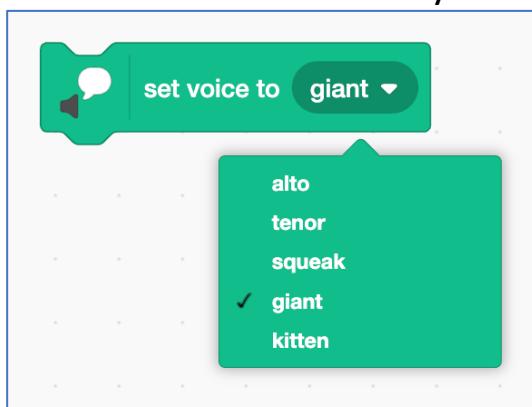
Another use of artificial intelligence is “text to speech”.  
Open the extensions panel



## 38. Add the text to speech extension to your project

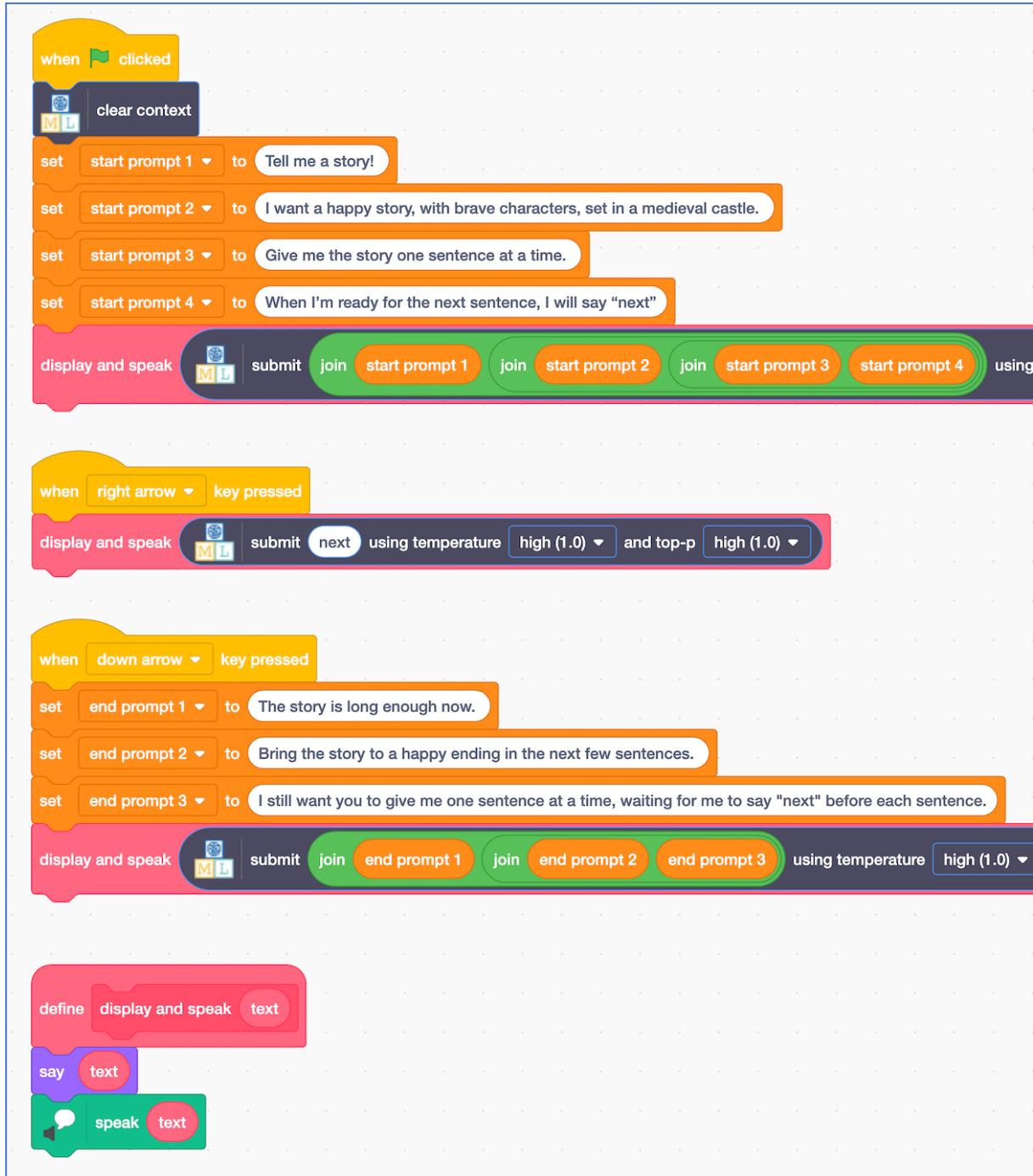


## 39. Choose a voice for your storyteller



## 40. Add the speak block to your project

*Here is one way to do it. You don't have to copy this.  
Try and do it your own way.*



## 41. Can you make the storyteller move around the stage while it tells the story?