Computing Project: Create a 'keeping safe' promotional animation using Scratch

To access Scratch at home you have two options: to use Scratch online or to download Scratch free so you can create and save scratch projects without an internet connection.
Online: https://scratch.mit.edu/join create a username (not your real name) and password and create your own world and access projects online.
Offline: https://scratch.mit.edu/download to download Scratch to your computer. (Requirements needed for download: Windows 10+, MasOS10.13+, ChromeOS, Android 6.0+)

Unit summary: Create an animated cartoon using characters and backgrounds of your own design to promote 'safety'. Your promotional animation can be about any subject as long as it includes suggestions on how to keep yourself and/or others safe.
Ideas to help: firework safety, road safety, sun safety, water safety, internet safety or coronavirus safety.

Lesson one:
Go to https://scratch.mit.edu and look to see what a program can do.
Press the 'explore' tab in the blue bar at the top of the page and look at the Scratch animations that other people have made. Explore ideas and see what the Scratch program can do. You can also see inside the animations by pressing the [See inside] tab. This shows you the Scratch blocks used to create the animation. (And is a great way to see how to do something if you get stuck at any time!)

Lesson two:
Put your ideas down on paper first. Create an algorithm for your promotional animation in the form of a storyboard. Your storyboard should break down what happens in the animation into smaller chunks. Use the top box to draw simple ideas of what your animation will look like. Use the bottom box for ideas and words you don't want to forget. Start simple then add more detail as you go. Think what your backdrop and characters will look like. What are they going to say? What keeping safe tips are they going to give? Check with others to see if your algorithm makes sense. Remember the more backdrops and characters used in your algorithm, the more you will have to create later.


(This is an example of an algorithm for Little Red Riding Hood)
C1: use the same backdrop and limit yourself to one or two characters. Write your animation ideas in the box below.
C2: use two backdrops and characters. Include speech in your ideas in the box below.
C3: use two or more backdrops and characters. Include ideas for speech, sounds, timings for backdrop and character changes etc.

Lesson 3:
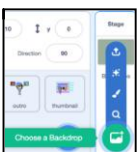
Create your own backdrop. Decide what your backdrop is going to look like. If unsure, look at your algorithm - that's where you put all of your ideas. Under the 'stage' heading, press the 'create backdrop' icon and choose the paint option. Create your backdrop by using the paint tools. If you are not sure what they do, have a play first. Get it wrong, mess it up then try
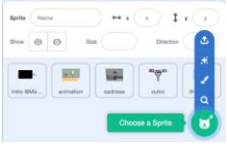
again - it's how we learn best! You can always use the back button or create another backdrop and try again.

C1: create one backdrop using the paint tool.

C2: create two backdrops using the paint tool. It could be the same backdrop with small changes added.

C3: create all the backdrops needed according to your storyboard algorithm.

Lesson 4:

 Create your own 'Sprite' (The term to describe an object, in this case our character, that can be moved in software.) Under the 'Sprite' heading, press the 'create sprite' icon and choose the paint option. Create your sprite by using the paint tools. Again if you are not sure what they do, have a play first. Get it wrong, mess it up then try again - it's how we learn best! You can always use the back button or create another sprite and try again. Don't forget to correctly 'size' your sprite so it fits your backdrop.

C1: create one sprite using the paint tool.

C2: create two sprites using the paint tool.

C3: create all the sprites needed according to your storyboard algorithm.

*C: create a costume for your sprite.

Lesson 5:

Animate your sprites. Drag and clip together different Scratch programming blocks to start building an animation script. Choose the sprite you wish to animate then press the 'code' tab (top left of the screen). This will display all the different programming blocks.

Start your script with a yellow 'events' tab. Try the block first. (It means: when the green flag is pressed your animation will start.)

Place your sprite on your backdrop where you want it to start from then place the blue 'go to' 'motion' tab and drag and click it to your start block. The x: and y: coordinate will be different according to where you placed your sprite. (This means that when you start your animation your sprite will always start from the same place.) The 'glide' blocks will move your sprite to the coordinate it is told to go to.

To add speech, use the purple 'looks' tab and grab and click a 'say' block to your script. Change the wording in the box - your sprite will say what you have typed.

Again, if you are not sure what they do, have a play first. Get it wrong, mess it up then try again - it's how we learn best! Start simple then add different blocks. Every block you click on can be unclicked by dragging it away from your script. To get rid of a block, drag it back to where it came from.

C1: programme your sprite to move across the backdrop.

C2: programme your sprite to move and say one of your 'safety' tips.

C3: programme your sprite to move and use speech multiple times. Make sure you state your safety message.

*C: program your sprites to move (change costumes and backdrops) and interact.

Lesson 6:

Add sound to your animation. The 'sounds' tab can be used to insert different sounds into your animation. For example you might want to include road sounds if you are creating a road safety animation.

To choose a sound, select the 'sounds' tab (top left of the screen). This will show you your chosen sound and give you ways to alter it (faster, slower, louder etc). To choose a different sound, press the 'add sound'

icon and pick a different one from the selection on offer. You can also record your own sound or speech and use it instead of speech bubbles.

C1: insert a sound into your animation.

C2: insert a recorded sound into your animation.

C3: replace a speech bubble with your voice recording.

*C: use the yellow 'broadcast' and 'when I receive' blocks, to programme your sprites to have a conversation. (When one sprite has finished talking, it can broadcast to the other sprite that it has finished and it's their turn to talk.)

Lesson 7:

Reviewing and improving: Ask a member of your family to watch your animation. Explain how your program works and ask them to give you constructive feedback.

Make changes to your animation on the basis of the feedback you receive. Finding and changing blocks or variables in your program to make it work better is called 'debugging'.

It might be that small changes are needed, for example your sprite does not move far enough across the backdrop, so you may need to change the coordinates you asked it to travel to.

Your sprite speech bubbles might show up at the same time, so you might want to change the 2 second variable in the block to a longer time. Try little changes of one thing at a time until you get it right.