

Digital Technology Themed Christmas Activities

Teacher Notes

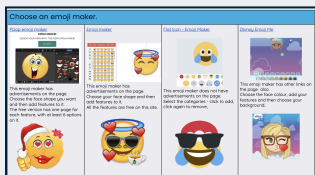


The 24 activities linked on the slides all have a connection in some way to digital technologies.

The notes below explain the connection for each activity.

The slide deck (thanks to slidesmania.com) is linked to the image above.

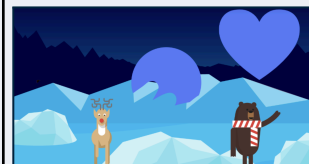
Use it anyway you like – make a copy for your students or just use a selection of activities.



1. Create a digital outcome to thank you someone special for helping you this year.

Designing and Developing Digital Outcomes

This task asks students to create a thank you for someone. They choose the digital site to create an emoji then the tool they want to



2. Create your own christmas themed digital outcome with Santa's drawing tools.

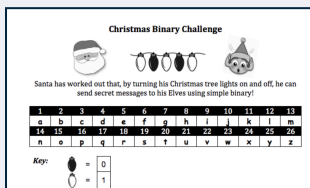
Designing and Developing Digital Outcomes

This is an activity from the Santa tracker site. It has simple drawing tools but also a cute collection of christmas characters that can be

use to create the thank you with.
The focus is on them being able to justify and explain the choices they make.

added to the canvas also.

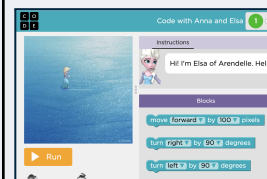
After creating their digital outcome talk about ways to save it. (If the download button doesn't work – screenshot it)
Where will they share it? Who will they share it with and will they write or talk about the outcome they made?



3.Solve the Christmas Binary Challenge and maybe make up one of your own.

Computational Thinking

A task that develops an understanding of binary numbers. It uses the idea of a switch being off or on to create a code to solve.
If your students haven't experienced binary before [csunplugged has a great resource](#) to introduce them to it.



4.Code with Anna and Elsa – they'll show you how to create a snowflake.

Computational Thinking

A code.org Hour of Code activity that steps students through a block coding activity that creates a snowflake.

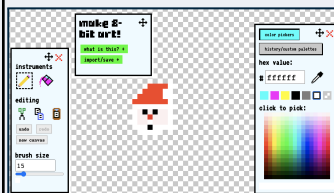
For more experienced students they could use Scratch to create their own snowflake or christmas ornament.



5.Search for Santa and friends before choosing a coding activity.

Computational Thinking Designing and Developing Digital Outcomes

This is another Santa Tracker activity. Students need to search for Santa and his friends before having a choice of coding activities to complete.
This is a great one to use for discussing how they have considered the end user – the person doing the activity. They have added hints that zoom you in closer to the area you need to be looking.

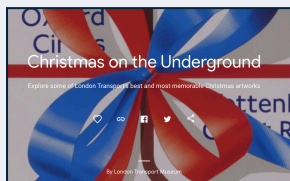


6.Create your own pixel art – what can you make?

Computational Thinking Designing and Developing Digital Outcomes

Help students understand how images are created from pixels by using this pixel art site.
Either select each pixel individually to colour or drag across multiple ones to colour together.
They can save their image once finished and then share it or use it elsewhere to write about it.

You could challenge your students to create their own christmas search digital outcome.

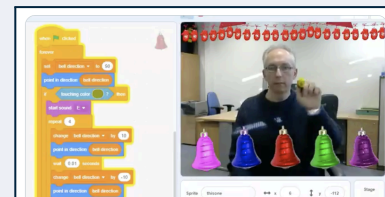


7. Explore christmas posters from over the years then create your own 2020 poster.

Designing and Developing Digital Outcomes

This is a Google Arts and Culture collection of posters that have been displayed on the London Underground over time. It's a great opportunity to discuss changes in design and how the end user is considered in the process.

Students can then create their own poster using [Adobe Spark](#) Post or [Canva](#) – both have design support built in. You could also use Powerpoint, Keynote, Google Slides or Google Drawings to create a poster.



8. Code your own christmas tune using Scratch.

Computational Thinking

Use [Scratch](#) to code a christmas tune. The example used also uses the camera sensing extension.

If your students are sure where to start you could use an existing project and look inside to see the code. This could be a springboard to get started.

[Scratch Christmas music](#)
[20 Christmas songs](#)
[Christmas Songs](#)



9. Follow the vector instructions to draw a christmas tree.

Computational Thinking

Designing and Developing Digital Outcomes

[Understanding the different ways images are represented digitally](#) is important. This activity helps develop an understanding of vector images – using coordinates rather than pixels to create images. Students could create their own instructions to swap with a buddy or challenge family members to solve.

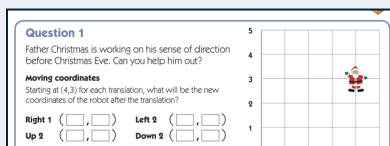


10. Watch the video to follow the algorithm and make your own origami Santa.

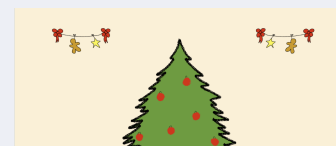
Computational Thinking

Origami is all about following algorithms.

Once students have made their Santa they could write the algorithm for someone else to follow – or create a different algorithm to produce a different outcome. Ask them to use relevant search keywords to find another suitable origami algorithm to share and make.



11. Practise moving Santa around by giving him the correct coordinates.



12. Use Slides, Keynote, PowerPoint or Canva to create an animation.

Computational Thinking

Often we ask students to create the commands in order to reach a certain spot. Giving them the commands then asking them for the coordinates of the spot they arrive at is a great way of further developing their knowledge around coordinates. Once they have completed this activity, getting them to create their own is an awesome next step to check for understanding.

Computational Thinking

Designing and Developing Digital Outcomes

Stop motion animation is a fun way to use Keynote, Powerpoint or Google Slides. Simply duplicate a slide, move something a little and duplicate again to repeat the process. Here's a [quick tutorial](#) if you're not sure how to do it.

If students want to make their own from the beginning they might like to use [Brush Ninja](#)

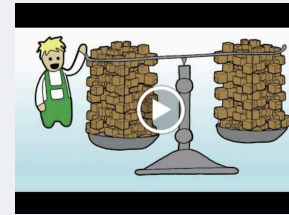


13. Can you unlock the Christmas Puzzle clues?

Computational Thinking

This is a [Ditch That Textbook](#) Christmas themed digital break out that helps develop those computational thinking skills around abstraction and decomposition. What's important and what's not while breaking it down into parts to solve.

Once they've solved this one they might like to create their own version.



14. Watch the story of 'Santa's Dirty Socks'. Explain to a buddy how they solved the problem.

Computational Thinking

Designing and Developing Digital Outcomes

Understanding how a computer saves, retrieves and sorts data is important.

This task explains how a way that data can be sorted. Challenge your students to use the process to sort other data also.

The csunplugged [Lesson plan](#) is a great resource.



15. Create your own holiday sheep then write the algorithm so a buddy can make theirs exactly the same.

Computational Thinking

Designing and Developing Digital Outcomes

This is a fun activity that has drag and drop ideas where they personalise the sheep to their liking.

Dance Move Algorithms

16. Choose a Christmas tune and create your own dance moves for it.

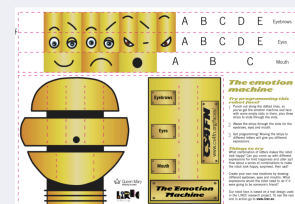
Computational Thinking

A fun unplugged activity where students create an algorithm for a dance to a christmas song of their choice.

You could bring in shapes and colours also by having a specific

You could extend it by getting students to add their own components to drag and drop. Encourage them to search for images using .png so the resulting search turns up images with transparent backgrounds.

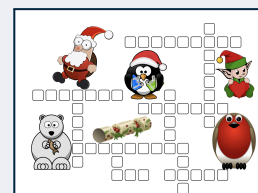
coloured shape represent a specific move – and then order them to create the dance sequence of their choice.



17. Make an emotion machine then code it to tell others how you feel about Christmas.

Computational Thinking

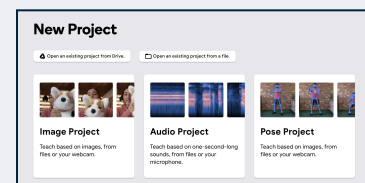
Follow the algorithm to create your own emotion machine. Once students have made it they can code it to show how they feel about any number of things. Show me the code that explains how you are feeling right now, or how you are feeling about the maths task you just completed.



18. Complete the Christmas Kriss Kross.

Computational Thinking

Students need to use logical thinking and their patterning skills to complete a kriss kross puzzle. To learn more [this resource](#) has some useful information about the connections to computer science.



19. Have some fun with machine learning. Can you teach it to recognise you?

Computational Thinking

Designing and Developing Digital Outcomes

Machine learning is an important concept for students to understand. This site is easy to use (has a video tutorial for each step) and they can create a project that teaches their device to recognize something they set up. It's a great example to talk about data storage and how it's being used. It's a Google experiment so does require a G Suite log in.

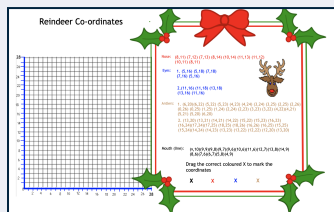
4x5	5x2	7x10	10x5	2x2	2x10	6x5	10x6	5x2
10x10	8x5	6x10	4x7	7x2	2x8	10x5	4x5	10x9
5x4	10x11	5x3	2x6	9x5	3x4	5x1	3x10	5x12
10x3	2x5	12x2	7x2	11x4	2x2	8x3	5x8	7x10
5x6	9x2	2x7	2x4	2x12	9x2	3x4	7x4	12x5
10x8	6x2	11x5	2x7	7x5	2x1	5x9	3x8	4x10
8x3	7x2	12x2	3x4	2x2	6x4	2x11	12x2	7x2
1x5	4x3	9x4	2x7	3x5	12x2	2x4	4x11	5x11
5x2	7x10	10x5	3x7	3x3	9x3	10x10	8x5	6x10

20. Complete the christmas multiplication grid – what do you create?

Computational Thinking

Designing and Developing Digital Outcomes

Understanding how conditional formatting works on sheets is a great skill to have. This activity requires students to enter the correct answer to the multiplication questions in order to create the correct outcome. (In this case – a xmas tree.) If you're new to conditional formatting you can check out a quick [tutorial here.](#) Show students how to do it and they can create their own multiplication example as an extension to the activity.



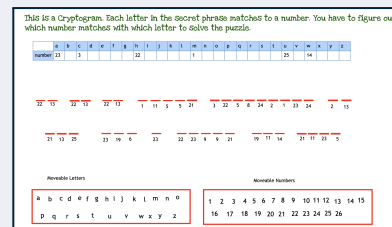
21. Follow the algorithm to create your reindeer.

Computational Thinking

Designing and Developing Digital Outcomes

This activity focuses on following the algorithm and locating the correct coordinates in order to create a reindeer image. Students complete this one digitally by dragging the x to the correct place.

Use sheets as an extension for students to create their own example.



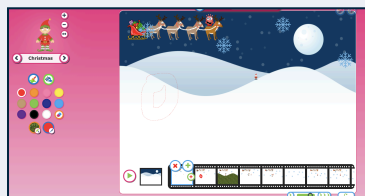
22. Solve the secret phrase, then use it to create your own hidden message.

Computational Thinking

Students need to use their decomposition skills to crack the code and then apply it to work out the message.

Use the code to write their own messages – or invent their own code to use.

[This website](#) might be handy if you want to explore code cracking a bit more.



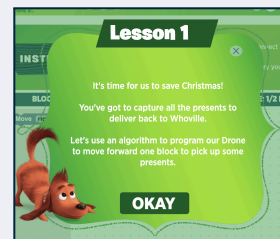
24. Create an animated christmas scene.

Computational Thinking

Designing and Developing Digital Outcomes

This tool has an onion skin built in so the students can see on each frame where their image was on the previous one. This makes it easy to create an animation that moves more smoothly.

They can draw their own images or choose from a selection of inbuilt elements.



25. Help the Grinch to save Christmas.

Computational Thinking

Christmas wouldn't be complete without the Grinch.

This is code.org Hour Of Code activity that steps students through step by step to code the grinch to save Christmas.