

FRENCH IMPRESSIONISM FROM THE MUSEUM OF FINE ARTS, BOSTON

DIGITAL CREATIVES: MONET, SUNRISE TO SUNSET

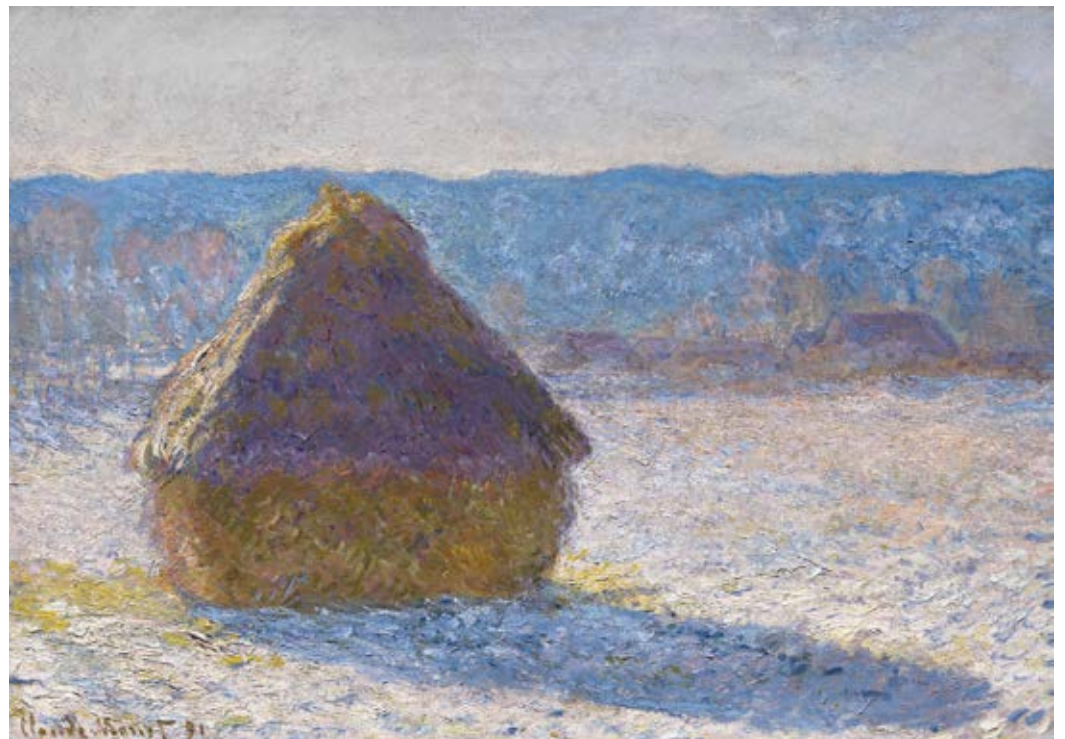
PART 1: LOOK INSIDE

INTRODUCTION (00.00)

VIDEO TRANSCRIPT

Artist Claude Monet painted over twenty-five pictures of the haystacks in the fields near his home at Giverny in Northern France – capturing the vibrant colours and atmosphere of the landscape at different times of day, and through different seasons.

Our animation *Monet, sunrise to sunset* takes inspiration from Monet's haystack paintings. It uses a block coding program called **Scratch** to show moving shadows and changing colours from sunrise to sunset. Let's take a look inside the animation to see what's going on by clicking the **see inside button**

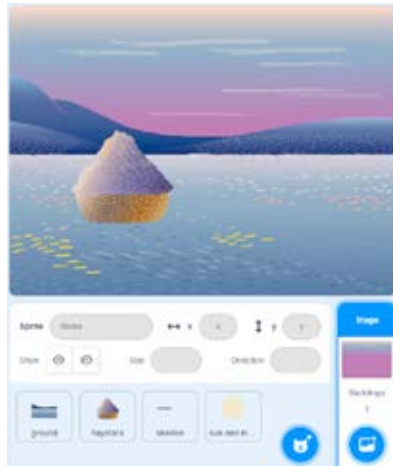


Claude Monet
Grainstack (snow effect) 1891
 oil on canvas
 65.4 x 92.4 cm
 Museum of Fine Arts, Boston
 Gift of Miss Aimée and Miss
 Rosamond Lamb in memory of Mr.
 and Mrs. Horatio Appleton Lamb
 (1970.253)
 Photography © Museum of Fine Arts,
 Boston. All Rights Reserved

SEE INSIDE (00.41)

In Scratch, the action takes place on the **stage**. The elements on the stage are the **sprites** – ground, haystack, shadow, and the sun and moon sprite. The background of the stage is called the backdrop. The backdrop and the sprites are in layers – the **backdrop**, the ground in front of that and then the haystack at the very front.

The instructions which tell the sprites and backdrop what to do are called **code blocks**. Combined together, they make the **script** which runs the animation.



THE SUN AND MOON SPRITE (01:23)

Let's take a look at the sun and moon sprite.

This first block of code gives the instruction that when the green flag is clicked the sun goes to the back layer. This means it looks like it goes away when it disappears behind the hills, but just like the real sun, it's still there, even if we don't see it. If we click on the **show/ don't show** for the ground sprite to make the hills invisible we can see what's really going on. What do you think might happen if we change the 'go to back layer' to 'go to front layer'? The sun turns in a circle, but in the foreground instead of in the sky and behind the hills.

Instructions contained in the **forever block** will repeat over and over forever. The instructions tell the sun to move three steps and turn one degree. If we change these numbers, what do you think will happen? If we increase the degrees the sun moves in a smaller circle. If we change the number of steps, the sun moves in a larger circle and heads off the stage.

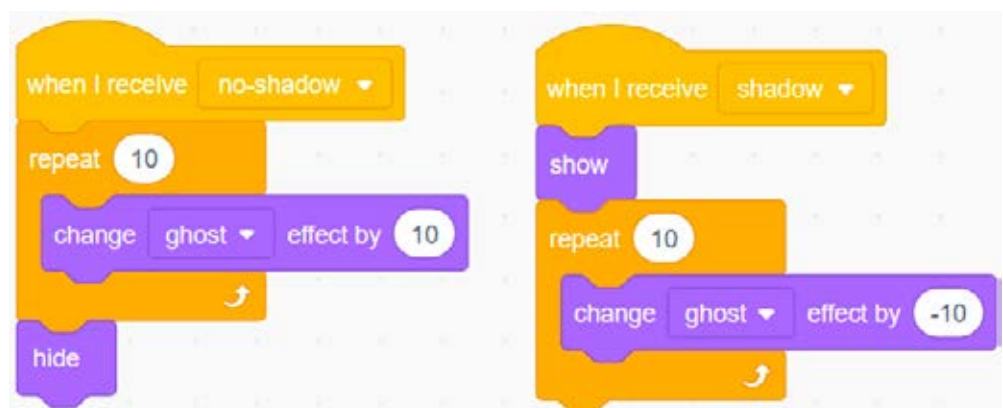


CONNECT THE SUN AND THE SHADOW: BROADCAST AND RECEIVE BLOCKS (03.02)

The next block of code connects the sun and the shadow. The code says if the sun is touching the ground sprite 'broadcast no-shadow'. If it isn't touching the ground sprite, (that is – if it's in the sky) 'broadcast shadow'.



Broadcast blocks like these send a broadcast throughout the whole Scratch program, activating **when I receive () blocks** like this one on the shadow sprite. When this code receives the shadow broadcast it applies a **ghost** effect to the shadow sprite which makes it fade in and out as the sun moves, just like a real shadow. When it receives the no shadow broadcast it hides the shadow sprite.



THE SHADOW (03.47)

There are two other blocks of code on the shadow sprite other than the 'when I receive' code. The first one just resets to delete any previous effects. You might like to try removing this and seeing what happens if it isn't there!

The next blocks tell the shadow to respond to the position of the sun: 'when the flag is clicked point towards the sun and moon'.



RECAP & IN THE NEXT VIDEO (04.14)

In this video we have learnt how to make shadows move as the sun moves across the sky. Monet didn't paint his haystacks at night – he was home in bed – but in our next video, we are going to imagine what was happening while Monet was sleeping and animate the same scene for night!

PART 2: NIGHT TIME

INTRODUCTION (00.00)

Welcome back. In our first video we discovered how we could make the shadow of an object move in response to the position of the sun throughout the day.

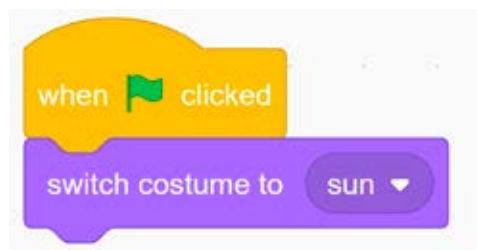
In this video we are going to move our scene from day time to night time. How will the scene be different? Let's have a look! When the sun disappears, the moon appears and the colours change.

LET'S GET STARTED (00.26)

Let's get started. If we click on the sun and moon sprite's **costume tab**, we can see that the sun and moon sprite actually has two different costumes. There's the sun costume and the moon costume.

We have to tell the program to change the sprite's costume from sun to moon when it goes from day to night, and to do that we have to add some code.

So when the flag is clicked we're going to change the costume to sun.



CHANGE FROM DAY TO NIGHT (01.09)

To tell the program when to change from day to night, we are going to use the position of the sun on the stage using its direction.

To show the direction a sprite is moving, Scratch uses an angle measurement called **direction** that is similar to degrees in a circle with the addition of negative values. We can see the direction value by looking at the **direction indicator** in the sprite's data. Values that are less than zero (negative numbers) are on the left-hand side of the circle.

CREATE A NEW BROADCAST (01.43)

Now, we are going to use the direction of the sun and moon to create a new broadcast in a big block of code.

You are going to create a new **message** for the broadcast called night, and this one – we'll call it day. So this says:

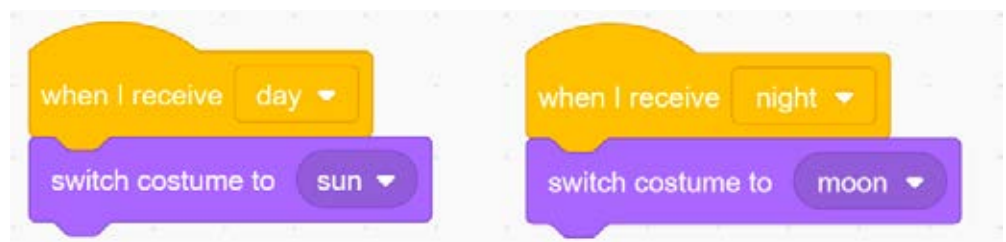
- Wait until the direction is less than zero; if the costume is sun, broadcast night.
- Else (otherwise) broadcast day.
- Wait until the direction value is greater than zero then repeat the loop again – forever.



ADD 'WHEN I RECEIVE' BLOCKS (02.33)

Next, we need to add 'when I receive' blocks which are activated by our broadcast:

- when I receive day, switch costume to sun
- when I receive night, switch costume to moon.



MAKE THE COLOUR OF THE LANDSCAPE CHANGE (03.04)

We also want to make the colour of the landscape change gradually as the sun and moon move across the sky. Copy the code blocks you can see here and add them to the script for the ground, the haystack, and also to the shadow.

Add them to the backdrop too, but remove the change colour effect block from each one.



TEST OUT YOUR ANIMATION (03.29)

Test your animation to see how it works. Now that you've learnt some new code in this tutorial, see if you can use the same coding ideas to make an animation of your own scene. Good luck.

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