

1st and 2nd  
class



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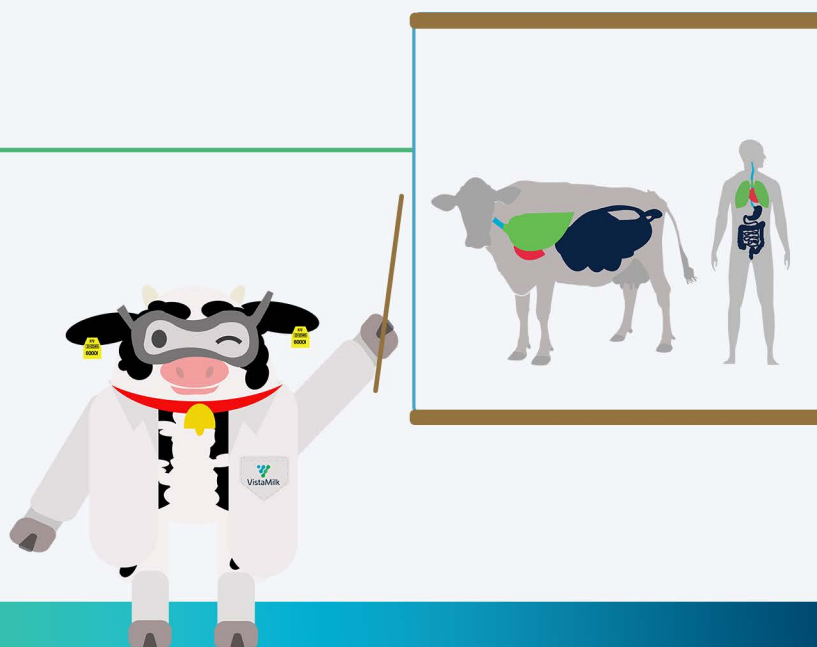
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<b>Date:</b>	<b>Class level:</b> 1st /2nd Class	<b>Subject:</b> Science	<b>Lesson topic:</b> Magic Milk
<b>Strand(s):</b> Materials	<b>Strand unit(s):</b> Properties and characteristics of materials; Materials and change		<b>Lesson duration:</b> 20 mins
<b>Identify the Skills/Concepts:</b> Exploring; Making; Evaluating; Observing; Investigating and Experimenting			
<b>Organisational Strategies for Teaching and Learning:</b> Whole class followed by pair/group work			
<p><u>Learning outcomes:</u></p> <p>The children will be able to...</p> <ul style="list-style-type: none"> <li>• Discuss that milk contains fats, proteins, minerals and vitamins</li> <li>• Discuss the purpose of these components</li> <li>• Validate the presence of these components through experimentation</li> </ul>			
<b>Assessment Strategies:</b> Teacher questioning; Teacher observation; Self-assessment			
<p><u>Resources/Materials:</u></p> <ul style="list-style-type: none"> <li>• Full Fat Milk</li> <li>• Food Colouring (more colours the better)</li> <li>• Dish Soap</li> <li>• Cotton Buds</li> <li>• Shallow trays</li> <li>• Pipettes</li> </ul>			
<p><u>Introduction:</u></p> <ul style="list-style-type: none"> <li>• The lesson will begin by asking them if they know any of the parts that make up milk. This can lead into explaining that milk has many parts including: fats; proteins; minerals and vitamins</li> <li>• This discussion can continue by questioning the class on the importance of fats, proteins, minerals and vitamins in the body</li> <li>• The teacher can then explain that today, the class must prove the presence of fats, proteins, minerals and vitamins in milk. The children are going to be carrying out an experiment. (Can be done individually/in pairs/in groups depending on class size and/or ability)</li> </ul>		<p><u>Key questions:</u></p> <ul style="list-style-type: none"> <li>• Does anyone know what is in milk?</li> <li>• Does anyone know what fats/ proteins /minerals and vitamins do for the body?</li> </ul>	



## Development:

- Firstly, have the children pour a very small amount of milk into the tray, just enough so that the bottom is covered.
- Add 3-4 drops of each food colouring colour into the milk. Be creative. Note the shape of the pattern and draw a picture.
- Dip the tip of a cotton bud into dishwashing soap. Just a small drop will do.
- Place the tip of the cotton bud that has the dishwashing soap on it into the center of the milk.
- Observe carefully as the magic happens!

## Key questions:

- What colours did you use?
- Did you make a pattern?
- Does anyone have any predictions as to what might happen?
- When did the 'magic' happen?

## Conclusion:

- Ask the children about what they observed and get feedback from each individual/pair/group.
- The children can then draw a picture of the colours and compare them to the colours before adding the soap.

## Key questions:

- What did you observe?
- What does that show us?
- Does everyone's look the same?
- How do the before and after pictures compare?



# Lesson Plan: The Cow's Body

Date:	Class level: 1st /2nd Class	Subject: Science	Lesson topic: Cow's Anatomy
Strand(s): Living Things	Strand unit(s): Plants and Animals; Myself	Lesson duration: 20-40 mins	
Identify the Skills/Concepts: Questioning; Observing; Predicting; Analysing; Exploring			
Organisational Strategies for Teaching and Learning: Whole class followed by pair work			
<u>Learning outcomes:</u>  The children will be able to... <ul style="list-style-type: none"><li>• Develop awareness of the internal organs of cows and humans</li><li>• Evaluating where they think these organs are located in the body of a human and cow</li><li>• Discussing the purpose of these organs and their actual locations</li></ul>			
Assessment Strategies: Teacher observation; Teacher questioning; Peer assessment; Self assessment			
<u>Resources/Materials:</u> <ul style="list-style-type: none"><li>• Human and cow diagrams</li><li>• Human and cow empty templates</li><li>• Human and cow organ cut outs</li></ul>			
<u>Introduction:</u> <ul style="list-style-type: none"><li>• The lesson can begin with asking about prior knowledge on the topic of internal organs.</li><li>• The teacher can explain that today we are going to be looking into the organs of humans and... cows!</li><li>• The class can have a brief discussion about some organs they know and what they do while the teacher shows some images from the PowerPoint.</li></ul>	<u>Key questions:</u> <ul style="list-style-type: none"><li>• What is an internal organ? Where is it?</li><li>• Who has internal organs? Do we? What about cows?</li><li>• Can anyone name any internal organs? What does the _____ do?</li></ul>		

## Development:

- The class will now be shown the empty templates of a human and cow. They will be given a set of organ cut outs in pairs.
- Firstly, they are tasked with sorting which organs belong to the human and which belong to the cow. After a few minutes the teacher can show the class who owns what organs.
- Next the children will be tasked with arranging the organs into the cow and human in a way that they think makes sense.
- After a few minutes the class teacher can then reveal the names of each of the organs and ask the children if they think they should adjust any of their choices.
- Finally, the complete diagram of both anatomy's can be shown to the children. Each pair can see how different or similar their version is.

## Key questions:

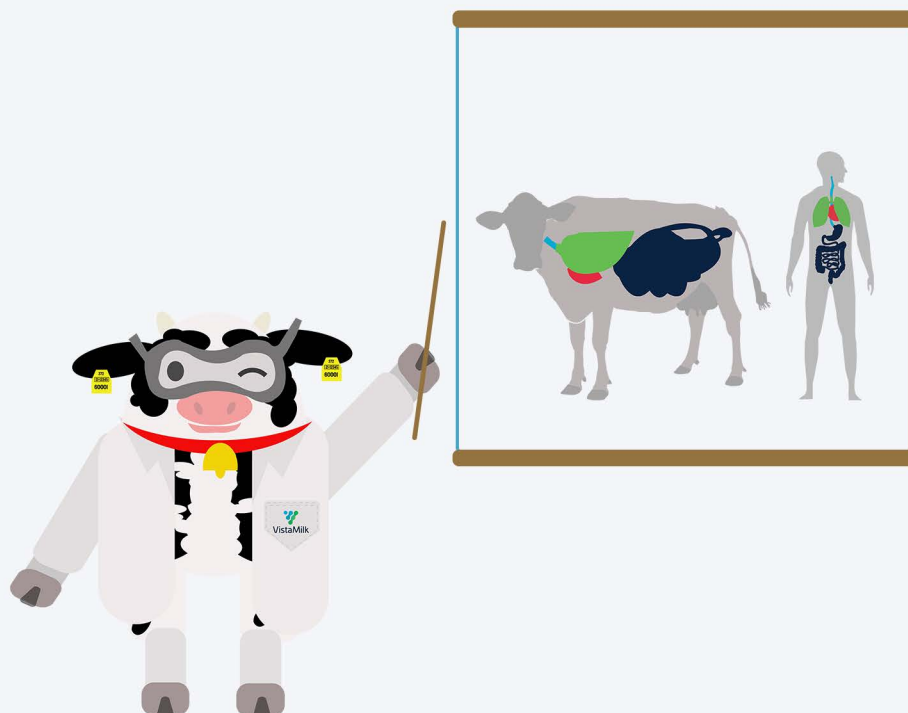
- Why do you think this is a human/cow organ?
- Why might a cow have bigger and different organs?
- Why did you put the \_\_\_\_\_ here?
- Now that you now that's a \_\_\_\_\_ would you put it somewhere else?
- Did you place your organs in a different/similar spot to the diagram here?

## Conclusion:

- To conclude the class can discuss the actual positions of each organ and its purpose in the body.

## Key questions:

- Was anyone surprised by where this organ is?
- Who's is bigger the human's or the cow's? Why?
- Why might a cow need more stomach's than a human?





# Lesson Plan: Soil Profiles

<b>Date:</b>	<b>Class level:</b> 1st /2nd Class	<b>Subject:</b> Science	<b>Lesson topic:</b> Soil Profile
<b>Strand(s):</b> Living Things	<b>Strand unit(s):</b> Plants and Animals	<b>Lesson duration:</b>	
<b>Identify the Skills/Concepts:</b> Questioning; Observing; Investigating and Experimenting; Recording and Communicating; Exploring; Planning; Making; Evaluating			
<b>Organisational Strategies for Teaching and Learning:</b> Whole class followed by pair work			
<b>Learning outcomes:</b>  The children will be able to... <ul style="list-style-type: none"><li>• Discuss where soil can be found in the local area</li><li>• Discuss what soil can contain</li><li>• Plan and execute an investigating to examine some soil</li><li>• Share results and draw conclusions</li></ul>			
<b>Assessment Strategies:</b> Teacher observation; Teacher assessment; Peer assessment; Self assessment			
<b>Resources/Materials:</b> <ul style="list-style-type: none"><li>• Plastic bottle</li><li>• Funnel</li><li>• Water</li><li>• Soil</li><li>• Soil profile diagram</li></ul>			
<b>Introduction:</b> <ul style="list-style-type: none"><li>• The teacher will begin by explaining that the class are going to find out what is in soil.</li><li>• Ask about prior knowledge of soil through questioning.</li><li>• Explain that today the class is going to experiment with some soil and find out what it contains.</li><li>• They will do this by making a soil profile.</li><li>• The children will be shown a diagram of a soil profile as an illustration of concept.</li></ul>		<b>Key questions:</b> <ul style="list-style-type: none"><li>• What is soil?</li><li>• What colour is it? What does it feel like?</li><li>• What is soil used for? Is all soil the same?</li><li>• Where is there soil around our school?</li></ul>	

## Development:

- The children will work in pairs for the experiment (this can be altered to groups/individual depending on the class)
- The experiment can be planned together as a class
- Each group will be given a cup of soil, funnel and bottle filled a third with water.
- Each pair will carefully scoop soil down the funnel into the bottle until it takes up about a third of the bottle
- They will then place the cap back on the bottle and shake it for 5 seconds each. The bottle can then be left to settle for a few hours or ideally until the next day.

## Key questions:

- What do you think will happen? Why?
- Why do we all have to use the same amount of water and soil?
- Is everyone happy with how they carried out the experiment?
- Would you do anything differently next time?

## Conclusion:

- Once the soil has settled, each pair needs to carefully examine what they observe.
- The children can then draw a sketch of their result. They can label the different particles by comparing their results to the diagram on the board.
- Some pairs can then share their results and what conclusions they drew about some of the particles present.

## Key questions:

- What can you see?
- What's at the top of the water?
- What's at the bottom?
- What colour is the water?
- Where are the heaviest/lightest particles?
- What is this particle here?





## Magic milk

The children will be able to...

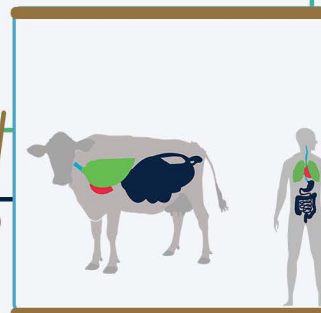
- Discuss that milk contains fats, proteins, minerals and vitamins
- Discuss the purpose of these components
- Validate the presence of these components through experimentation



## A cow's body

The children will be able to...

- Develop awareness of the internal organs of cows and humans
- Evaluating where they think these organs are located in the body of a human and cow
- Discussing the purpose of these organs and their actual locations



## Soil profiles

The children will be able to...

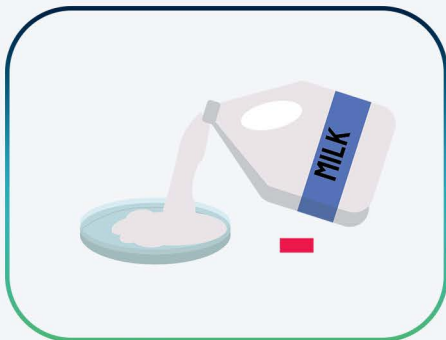
- Discuss where soil can be found in the local area
- Discuss what soil can contain
- Plan and execute an experiment to examine some soil
- Share results and draw conclusions



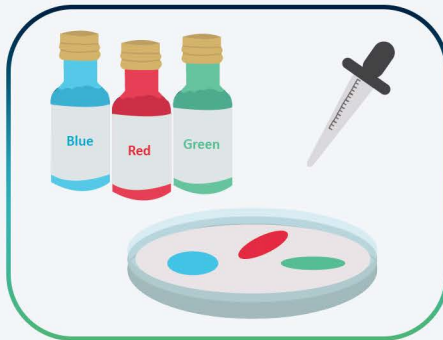
## WHAT YOU NEED:



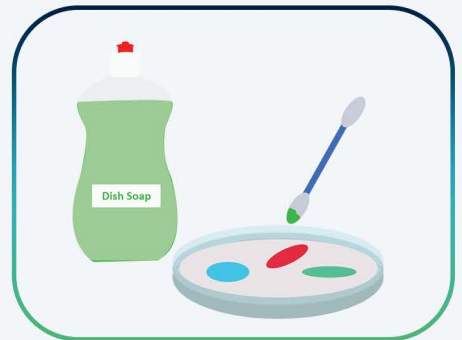
## TO DO:



1. Pour a small amount of milk in the tray until it covers the bottom.



2. Use the dropper to drop 3-4 drops of food colouring into the milk. Use lots of colours!

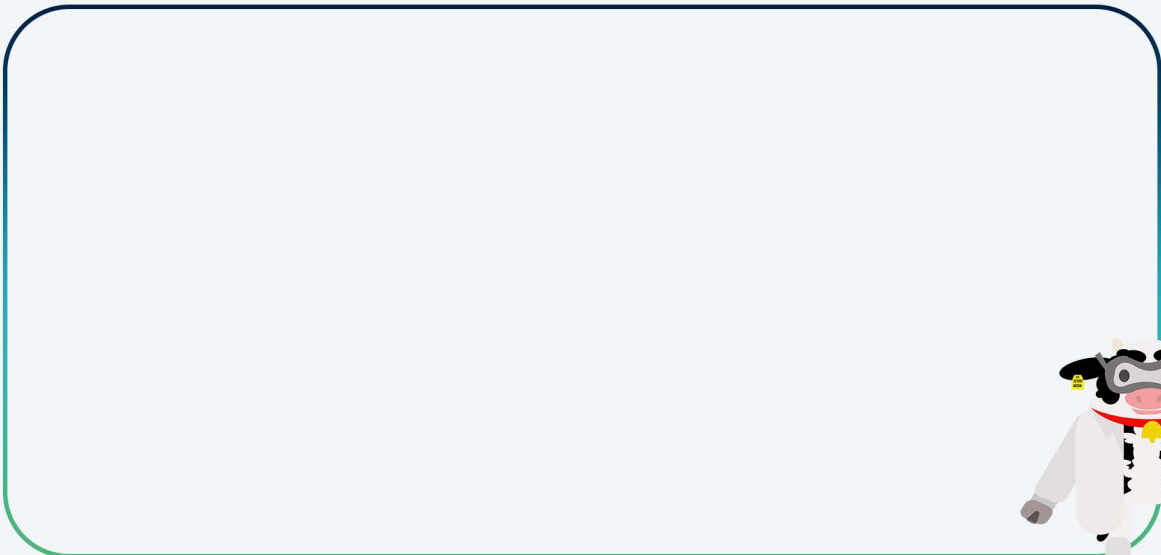


3. Dip the tip of a cotton bud into dish soap and put it in the tray near the colours.



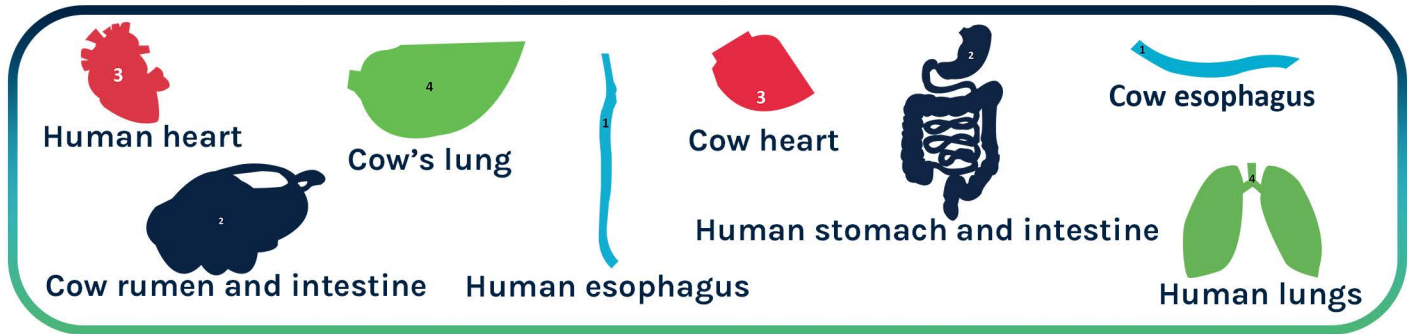
What happened to the colours in the milk when the cotton bud was put in?

Can you draw what happened in the milk?



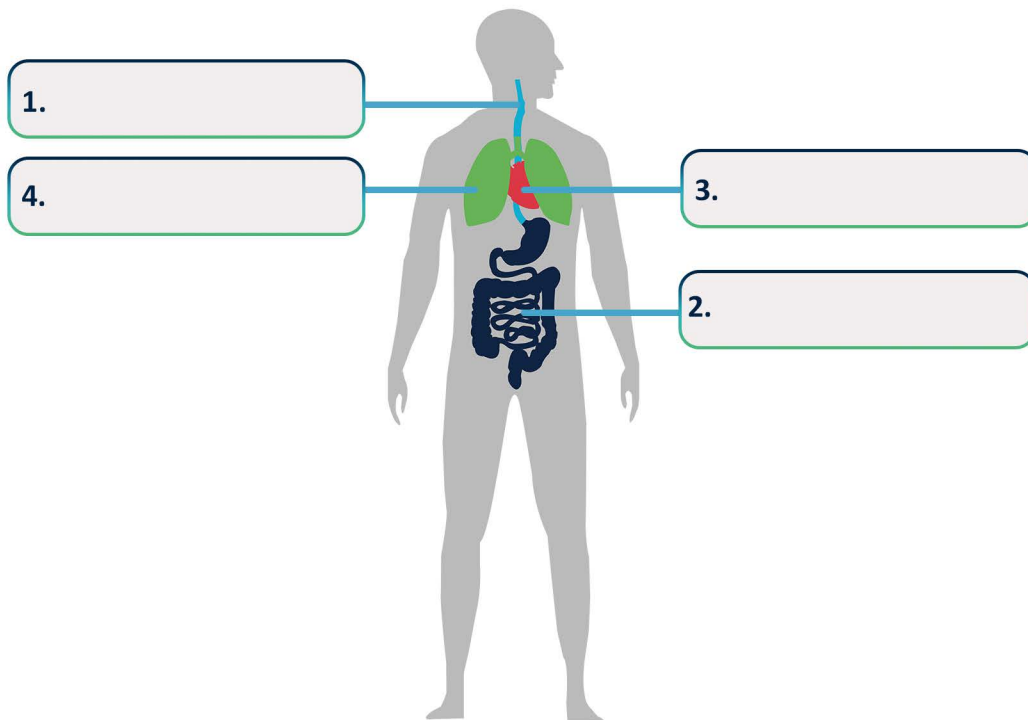
# The Cow's Body

Sort out the human and cow's organs from the box below.

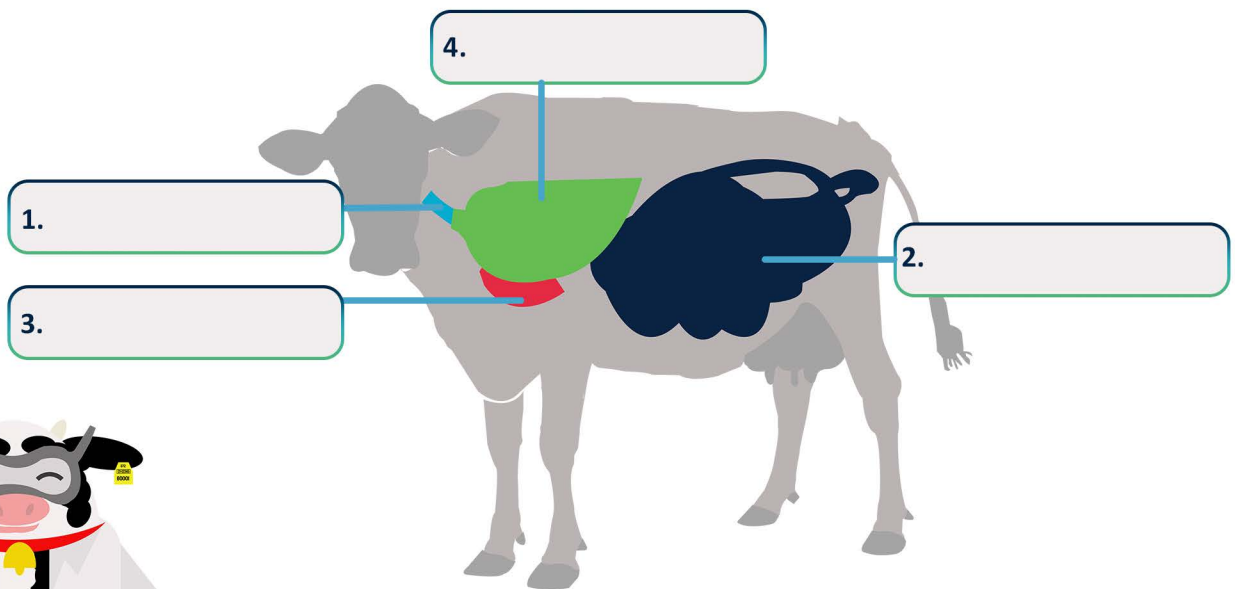


Human heart (3)      Cow's lung (4)      Human esophagus (1)      Cow heart (3)      Human stomach and intestine (2)      Cow esophagus (1)

Cow rumen and intestine (2)      Human lungs



1.      3.      4.      2.



4.      1.      3.      2.





## WHAT YOU NEED:



Bottle of water



Funnel



Cup of Soil

## TO DO:



1. Fill a third of a water bottle with water.



2. Using the funnel, spoon some soil into the bottle until it is level with the water.

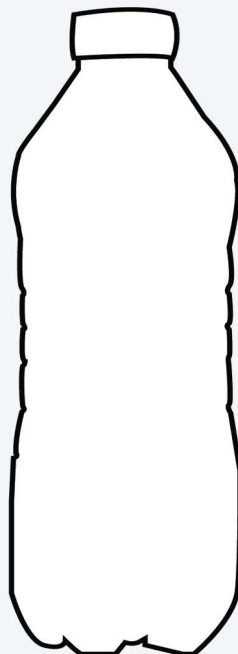


3. Put the cap back on the bottle and shake for 5 seconds.

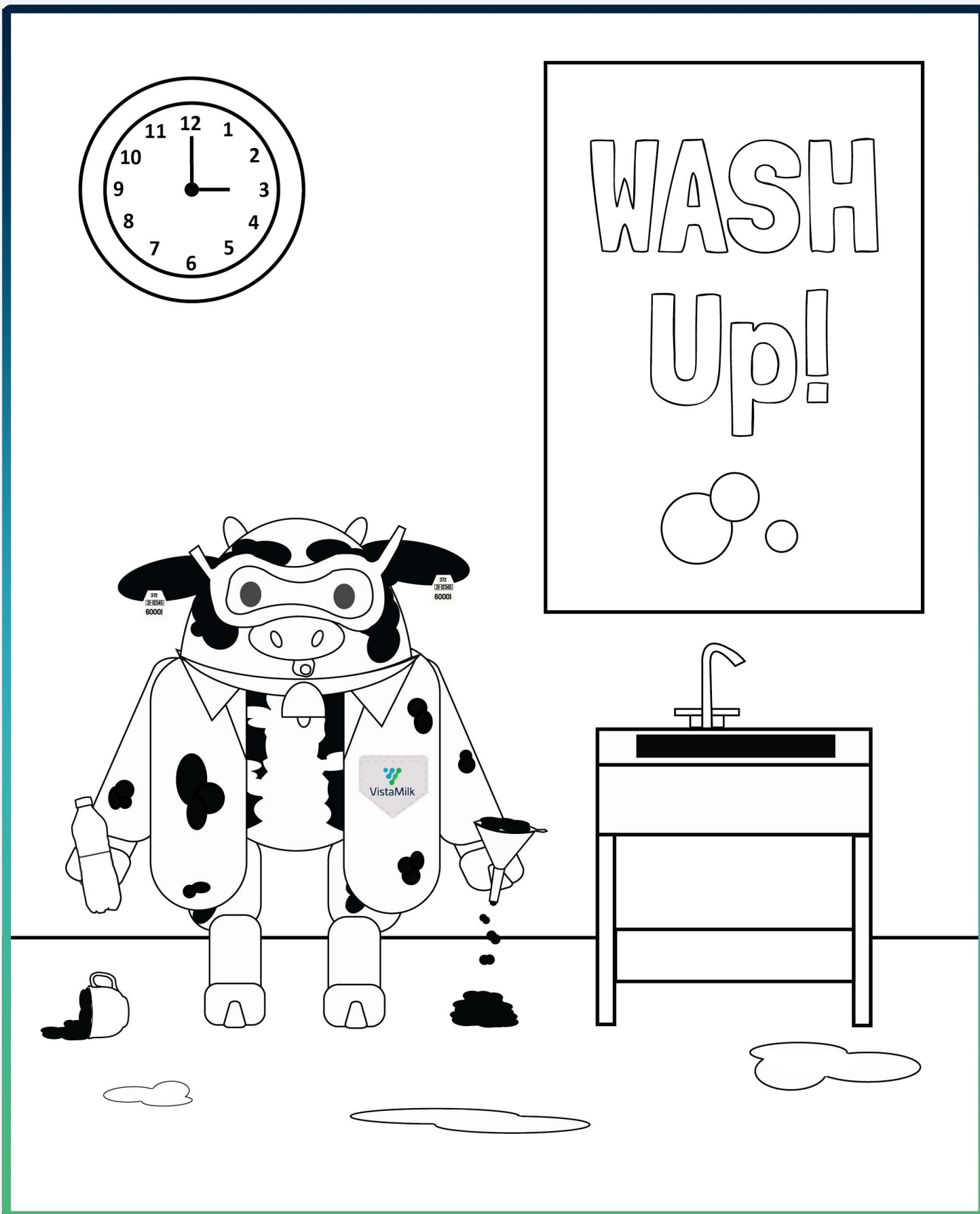


Leave the soil to settle for a few hours after shaking the bottle.

Can you draw what happened to the soil?



Colour in the picture below!





# VistaMilk

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