

## TOPIC : BE A SPY

**Think a ton!!!**



1. Why Detectives analyse the finger prints of the culprits ?
2. What is the instrument that submarines use for spying ?
3. What are spy codes ?
4. Can everyone become a spy ?

### **Know what's inside**

<b>Activity</b>	<b>Description</b>
<b>Engage</b>	Introduction to forensics and spying methods.
<b>Elaborate</b>	Participants perform their own spy operations by analysing the finger prints and preserving them using dusting method.
<b>Explore</b>	Participants understand how the most common spy methods work. They decipher secrete codes.
<b>Explain</b>	Participants will be equipped with various spy techniques and rules
<b>Evaluate</b>	Self - assessment

## Know to question; Question to know!!

1. At what age do humans start to get fingerprints?
2. What are other clues Detectives collect from the Crime Scene
3. ....
4. ....
5. ....
6. ....
7. ....

### *Krish, Ahana and Swara are playing in the backyard*

**Krish:** Swara... Ahana.. Come here .. Look at this safety locker.

**Ahana:** Wohoooooooooo...

**Swara:** Don't get so excited very soon.

**Ahana:** Why so? Look we cannot open this locker; we need to know the password or Finger prints to open this.

**Krish:** We have to find the password of this box here.

**Swara:** How do we do that?

**Ahana:** These seems to be some new language that we cannot understand.

**Swara:** Yes, the letters are jumbled may be. None of them look like proper words.

**Krish:** And there are few numbers as well in between. Who knows what they mean?

**Ahana:** We might have to use your super powers now Krish, come on, that's why we took you along with us.

**Krish:** I am not a superman.. We need to find out some logic hidden in this jumbled up sentence

**Ahana:** Well, I will try to dig my memories to find any cue.



## ELABORATE

Spying may be fun and exciting, but it's not easy! A good spy kid is hard to find. To be the next undercover agent, you'll need to get trained, create a team, learn mission protocol, hide the evidence and enhance your spying technique through various spy activities.

### A. Materials required:

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### B. About project:

A spy should know a lot about technology, such as computer shortcuts and knowledge of gadgets. They should also make maps, plans, charts, and notes about the secret mission. They have to learn sending secret messages to their partners. They need whatever devices would help them debunk their case, like a camera. They also have to learn skills like preserving the finger prints from the crime scene.

We leave fingerprints on any object that we touch because of the oil on our skin. Many of these are not readily visible to the naked eye and need to be treated in some way to increase their visibility.

### C. How does it work?

The patterns of tiny ridges that can be seen on the pad of each fingertip are known as fingerprints. They form on a human embryo during the fourth and fifth month of development and do not change throughout an individual's life. Fingerprints are unique to an individual and even identical twins do not have fingerprints that are exactly the same. Fingerprinting has now been recognised as an important source of forensic evidence in the solving of crimes.



## EXPLORE

### Activity 1.

#### Secret codes/ messages

Puzzling with words - Secret messages are used to pass information from one place to another without leaking the message to the third person. A smart spy must be able to decode secret message

1. The words pycomesf romt hef renchw orde spionag e  
.....

2. Sihtegassem sipot terces. Ti sah noitamrofni rof ouy  
.....

3. sLoosk cact ithie eteaem nwhicnh cics etowarades iyour slefst asidae. Wthewy ehavvee sas omessagoe mfomr eyoeu. (Clue: Has two clues)  
.....

4. Find the secret message present in 6395135 96 11056 2 135 using the details below.

A	B	C	D	E	F	G	H	I	J	K	L	M
1	2	3	4	5	6	7	8	9	10	11	12	13
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

**Write your own secret messages using above clues**

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**Ahana:** Finally we made it. We could able decipher the code and open the box !! Yay !!!

**Krish:** That is a lot of money. It would take days together to count how much it is.

**Ahana:** Let me do that. (Laughs)

**Krish:** We have to find out who must have left it here.

**Ahana & Swara:** We will go and Inform dad about this. Lets go and call him.

## Activity 2

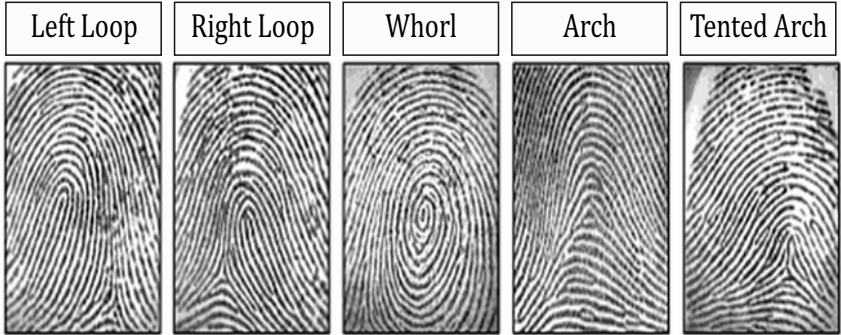
### Unique fingerprint:

Use inkpad to check the finger print. Make rolled and plain finger prints on the Finger print record

**Comparison of fingerprints and how forensic researchers hunt for fingerprints.**

Name:		Hand:	
<b>Rolled impression</b>			
Thumb	Index finger	Middle finger	
Ring finger	Little finger		
<b>Plain Impression</b>			
Thumb	Index finger	Middle finger	
Ring finger	Little finger		





**What kind of finger print do you have?**

Thumb: .....

Index finger: .....

Middle finger: .....

Ring finger: .....

Little finger: .....

Just look for similar patterns in each print. The experts use the minute detection technique to match the prints. Also compare the prints with your friend and see the differences.

With your parents help, Check the fingerprints of your father/mother or grandfather/grandmother or brother/sister and see if the formations on your fingers are similar.



## EXPLAIN

- Spying (Espionage) is a way of gathering information secretly about others without them knowing about it. The word "spy" is derived from various old words meaning "to look at or watch" such as the Latin "specere" or the Anglo-Norman "espier".
- Spy uses forensic science, secret codes and many other techniques to gather information and unfold the details of the case. Central Forensic Science Laboratory and National Institute of Forensic Sciences (NIFC) are the agencies which support police in identifying criminals in India.
- It is very important for the army missions and ships that their messages about future plans and other communications should not be understood by the enemy! Code languages are used to communicate with each other. The codes vary from simple letter based codes to complex codes that involve a lot of mathematical calculations. Morse Code uses dots and dashes to convey messages.
- Invisible inks, also called sympathetic inks, can be made with many different substances. Sometimes they appear when you heat them up; other times another chemical reveals them. Some of them are lemon juice, grapefruit juice, vinegar, milk, saltwater, pencil, phenolphthalein and bases.
- The ridges in the shape of loops and spirals that you see on your fingertips and the thumb actually help you to grasp an object. Without them, you will not be able to write or paint properly. Everyone has ridges on the tips of their fingers, so what is special about them? No two fingerprints are exactly alike!
- Scientists compare fingerprints and group them according to the similar ridge patterns they find. The ridges on most people's fingers resemble a whorl, loop, or an arch. What do yours look like? Just like fingerprints, our retinal print and tongue prints are also unique and cannot be forged by anyone.



## EVALUATE:

- What is the function of the ridges on our fingers which create fingerprints? They help us to identify individual human beings.
  - They provide protection for our touch receptors.
  - They provide insulation for the tissues under the skin.
  - They enable us to grasp objects.

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- What causes fingerprints to be left behind when we touch things?
  - the natural oils in the skin
  - the moisture in the atmosphere
  - the smoothness of the surfaces we touch
  - the dust on the things we touch

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- Which part of the human body has similar patterns like finger prints
  - Retina, - Hair, - Ears, - Nose

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- Which of the following type of finger print is incorrect Whorl
  - Left Loop, - Arch, - Spiral

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- At what age do human beings acquire fingerprints?
  - during first year of the birth
  - at three month's Embryo development
  - at two weeks of age
  - at five month's Embryo development

