



FORENSIC SCIENCE ACTIVITY KIT

KUDZU KIDS: POOCH SLEUTHS

WHAT'S IN HERE?

YOUR KIT INCLUDES:

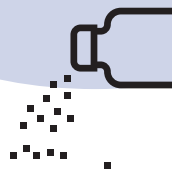
Access to the complete **Kudzu Kids: Pooch Sleuths** mystery for you to investigate



A shoe print casting kit



A theft detection powder kit



Kit activity instructions with directions for using your kit materials and suggested activities

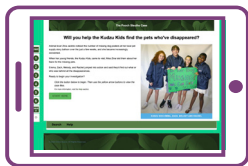


WHAT DO I DO WITH ALL THIS STUFF?

THE KUDZU KIDS – RACHEL, ZACH, EMMA AND MELANIE – ARE TRYING TO FIND OUT WHY SO MANY PET DOGS HAVE GONE MISSING LATELY, AND YOU CAN HELP.

1.

Visit **kudzukids.com** to start your investigation.



2.

When the Kudzu Kids collect evidence, use the materials in your kit to learn about the techniques they use.

- Use plaster casting to recover a shoe print from the dirt.
- Use theft detection powder to identify a suspect.
- Use casting compound to collect sample shoe prints from your suspects.

3.

When you think you know whodunit, enter the passcode to access the Case Solution.



WHAT IF I HAVE QUESTIONS?

If you need any assistance with the site or the kits, please email your request to help@kudzukids.com.



Use the QR code to access **kudzukids.com** to start your investigation.





FORENSIC SCIENCE ACTIVITY KIT

Use this Crime Scene activity pack to demonstrate the investigative tools used in the Kudzu Kids: Pooch Sleuths case.

These instructions describe how to use the tools and suggest activities to explore their use.

1. Casting Activity Kit Contents:

- (1) 5 pound container of casting compound
- (2) 2-lb bags Traxtone casting powder
- (1) casting container
- (1) bottle of dirt hardener AKA hair spray

2. Theft Detection Kit Contents:

- (1) 1-oz jar fluorescent theft powder
- (1) UV flashlight
- (1) Goat hair brush

TRAXTONE CASTING POWDER INSTRUCTIONS

STEP 1: PREPARE THE TRAXTONE

1. Cut a small hole in the plastic bag of Traxtone powder.
2. Add 9 ounces of water to the bag.
3. Begin mixing by gently manipulating the bag with your hands to combine.
4. When the mixture appears green, it is ready to pour.

Step 2: PREPARE THE CASTING AREA

1. Place the casting frame around the area of the print.
TIP: Make sure the frame does not touch any part of the print itself.
2. Spray the hair spray on the dirt to harden the print.
3. Allow to set for 60 seconds.

Step 3: MAKE THE CAST

1. Gently pour the Traxtone around the perimeter of the hardened print and direct the flow to cover the print.
TIP: If the Traxtone doesn't completely cover the print when you pour it, gently jiggle the top surface of the Traxtone you've already poured to help it get moving.
2. Use enough Traxtone to capture the entire print and make the cast thick enough to reduce the possibility of breakage (approximately 1-inch thick).
3. Allow to set for 20-30 minutes.

Step 4: COLLECT THE CAST

1. Lightly tap the top surface of the cast to make sure it's fully hardened.
2. Gently lift the cast from the dirt.
TIP: You may need to carefully pull away some of the dirt under the cast to loosen it.
3. DO NOT attempt to clean the cast until it has hardened for at least 48 hours. You could damage the impression.



FLUORESCENT THEFT DETECTION POWDER INSTRUCTIONS

Step 1: APPLY THE POWDER

1. Use the brush included in your kit or a cotton-tipped swab to apply a small quantity of powder to the object.
2. Once applied, the powder will not be visible to the naked eye.

Step 2: WAIT

1. Whenever anyone touches that object, the powder will transfer to their hands or any other part of their body (e.g., arm, foot, etc.) that comes in contact with the object.
2. Once someone has the powder on their hands, it may also be transferred to their clothes, their face or other items they touch.

Step 3: CHECK YOUR SUSPECT(S)

1. Shine the UV light included in your kit or a black light on your suspect's hands and clothes.
2. Any transferred powder will fluoresce a bright blue-white under the UV light.



FUN FACTS

Traxtone casting powder is a diestone dental stone material that produces highly-detailed impressions with minimum setting time. Special pigment flakes embedded inside the casting material indicate when the Traxtone is sufficiently mixed. Once

all the pigment flakes have been blended into the mixture, it will appear green and is ready to pour. Traxtone provides superior detail reproduction and durability and has a higher compression strength than most casting materials at 18,000 psi.

CASTING ACTIVITY

1

WHO LEFT THE SHOE PRINT?

1. Have someone in your group place a shoe print in the dirt.
2. Use your Traxtone to collect a cast of the print as described above.
3. Assemble your suspects and photograph the soles of their shoes.
4. Print the photos on your printer and compare them to your cast.



HERE'S WHAT TO LOOK FOR WHEN COMPARING YOUR SUSPECTS' SHOE PRINTS TO YOUR SHOE PRINT CAST.

EXAMINE YOUR UNKNOWN SHOE PRINT (the Traxtone cast).

● INDIVIDUAL CHARACTERISTICS

- What sort of pattern does the sole have — waffle, tennis shoe, etc.?
- Can you identify the brand?
- Do you see any unique characteristics in the tread?

● WEAR CHARACTERISTICS

- Do you see any breaks in the tread?
- Do you see any signs of uneven wear?
- Do you see any defects like cuts, nicks or other damage?

EXAMINE YOUR THE KNOWN SHOE PRINTS (the ones from each of your s uspects)

- If your known print is to scale, is the length and width of the known print consistent with the unknown print?
- Are the individual characteristics and/or wear characteristics (described above) consistent with the unknown print?

MORE HERE:

<http://www.forensicsciencesimplified.org/fwt/FootwearTireTracks.pdf>

CASTING ACTIVITY

2

FUN WITH CASTING COMPOUND

You may have noticed that footprints in dirt aren't high resolution and lack fine detail. To collect a detailed impression, use your casting compound.

1. Pour the casting compound into the included casting container.
2. Smooth the casting compound with a trowel to achieve an even surface.
3. Place a foot, shoe or other item firmly into the casting compound to get an imprint.
4. After removing the item, pour Traxtone casting material into the form to make a cast as described above.

YOU CAN REUSE CASTING COMPOUND

When you've removed the cast, break up the casting compound with a trowel and then smooth it over again so it looks as it did at the start.

ABOUT THE CASTING COMPOUND

Your casting compound is a unique molding material that won't stick to clothes, hands or surfaces.

It never dries out, so you can use it again and again.

It's also non-toxic and eco-friendly.





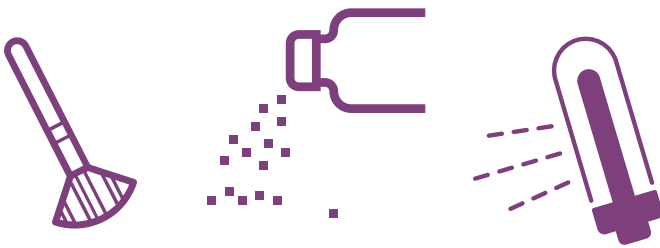
FORENSIC SCIENCE ACTIVITY KIT

THEFT DETECTION POWDER ACTIVITY

1

WHO TOOK THE BOOK?

Use the theft detection powder, brush, and UV light to find out who took a book that you specially prepared. Involve a group of three or more people as your pool of suspects.



STEP 1: PREPARE

1. Choose a book that you don't mind being mildly damaged by the powder if any remains.
2. Place powder between several pages.
3. Put the book into position for the demonstration and don't move it.
4. Place powder on the cover and exterior of the book. Take care not to spill powder.

Step 2: HIDE THE BOOK

1. Ask the group to select a single person among them to hide the book. Tell them you will use your detecting skills to ID the person they chose.
2. Leave the room
3. The selected person will hide the book, and as a result, will get powder on their hands.

TIP: The person may touch their pants pockets, their face, or other areas on their person after touching the powder.

TIP: The powder may leave a trail as the book is moved to the new location.

Step 3: IDENTIFY WHODUNIT!

1. When your group gives you the all-clear, return to the room.
2. Turn off the lights, and shine the UV light from your kit on everyone's hands.
TIP: Someone, other than yourself, should be glowing. That person is your prime suspect.
3. Shine the light on the area near where the book was located when you left the room. You may get lucky and find a trail of powder that will lead to the hidden book!

THEFT DETECTION POWDER ACTIVITY

2

DID YOU WASH YOUR HANDS?

After you've solved the Kudzu Kids: Pooch Sleuths case, you'll have some theft detection powder left over. You can use some of it to teach students or employees about proper hand washing.

1. Use the brush included in your kit to apply the theft detection powder to the palm and back of each person's hands.
2. Shine the UV flashlight included in your kit on the front and back of their hands so they can see the powder, which represents the dirt and germs they can pick up during everyday activities.
3. Ask each person to wash their hands in warm water using soap for at least 20 seconds.

TIP: Advise participants not to touch the sink or nearby surfaces after they've finished washing so they won't re-transfer any powder from those surfaces to their hands.

4. Provide each person with enough powder-free paper towels to dry their hands and turn off the faucet.
5. When they're finished, shine the UV flashlight on their hands again. Any remaining fluorescent areas will indicate where their washing technique fell short so they know where they need to improve next time.

