Biosecurity Unit Lesson #1

**Title Of Lesson: *Small Ruminants***

**Subject/Course/Grade: Ag Science**

* **This curriculum contains two different lessons that you can do together or as separate activities**

Learning Objectives:

* Students will be able to recall what a FAMACHA test is used for
* Students will understand why sheep and goats are classified as small ruminant
* Students will be able to recall how to spin yarn

Main Concept:

* Students will learn more about the wool industry and spinning and FAMACHA testing and scoring done.

Students will understand/know…

* **Vocabulary**
	+ **Small ruminants**- reference grazing mammals such as sheep’s and goats
	+ **Graze –** eat grass in a field.
	+ **Wool –** fibrous covering from sheep
	+ **Cashmere** – fine, soft wool originally from a Kashmir goat.
	+ **Shear** – cutting wool from sheep. Allows for the wool to be spun and used to make yarn.
	+ **Impurities –** mud or dirt that can be found in the wool after shearing.
	+ **Picker –** a device that is used to separate out fibre before carding to make the process easier.
	+ **Carding –** process that makes all the wool fibers are untangled and aligned in one direction to make the wool easier to spin.
	+ **Parasite –** oraganism that lives in or on an animal and benefits by using the animal as a nutrient source.
	+ **Microorganism –** a microscopic organism such as a bacteria or virus
	+ **Dewormer –** an agent that can either be applied to the skin or given orally based on the kind of dewormer used, that will help to rid an animal of worm.
	+ **Resistance –** genetic ability of parasites to survive a treatment that used to be effective.
	+ **FAMACHA –** a test done on sheep and goats that allows for selective treatment for parasites

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| Show introduction video “Small ruminants.”**Background:**FAMACHA“FAMACHA testing is an important test that farmers or veterinarians can administer to sheep and goats herds. As we learned in the video this is an important test to see if we should deworm specific sheep or goats based off their parasite load. We wouldn’t want to treat all sheep and goats every year since we have a lot of dewormers that are ineffective now since parasites are building up tolerance to regularly used dewormer.”“In this activity you will be the ones to administer this test to a ‘herd’ of small ruminants and using the FAMACHA test card. We are going to see which ones of the small ruminants would need to get dewormed and which ones don’t.”Wool activity“Spinning wool to be made into yarn has been a practice that has happened for thousands of years. Today though we can easily buy pre spun yarn for any fun craft projects we may need. But the process is a time-consuming process to make that yarn.”“Today we are going to do a very small portion of yarn spinning from wool.”**Activity**Materials NeededFAMACHA testing: Small disposable cupsFAMACHA print out.Rubber bandsTissues Various colors of red candy, recommend m&m valentine candy to match FAMACHA colors, just need candy that ranges from bright red to white to represent the FAMACHA colors.Wool activity:Twizzlers for the classOther candies (skittles, m&m’s, etc)Plastic sandwich baggiesBefore students arrive:FAMACHA testing:1. Each cup will represent a herd of sheep or goats.
2. Put about 3-4 variety of red candies and put a tissue over the cup full of candy and cut a slit into the top.
3. You can also label each herd by putting names on the cups or keep cups blank and let students name their own herds.

Wool activity:1. Pull apart twizzlers and put them into sandwich baggies for each one of the students.
2. Sprinkle in the other candy to represents impurities in wools
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| ActivityFAMACHAHand out cups to each student that have the red candies in them and have tissue papers over each one with a slit at the top. Also hand out students the FAMACHA score printed paper for a reference sheet during the activity. Students can then name their ‘herds’ by labeling the cup with the name that they choose.In this activity, the squeezing of the small ruminant’s eye will be demonstrated by squeezing the candy out from the tissue. Students should gently squeeze out the candies one by one and compare the color to the FAMACHA score sheet. Each candy can be represented as one small ruminant on the farm and will need to make sure they are identified as such. Students can get into small groups and discuss which animals they will deworm and which ones they are choosing not to with the groups and see if any of them have difference in opinions.Wool activityHand out the ‘wool bags’ to each student that contain the pulled apart twizzlers and candy in them. Hand out paper towels or an extra cup to each student. Have them first take out the other candy that is not the twizzlers. These are the ‘impurities’ in wool that we need to take out first to clean the wool.Have them then pull out the twizzlers strands and have them put them all in a row. This is the carding process where we are trying to get all the wool going in one direction so that we are able to spin it easier. Once all the strands are in the same direction instruct the students to twist them back together to make the ‘yarn.’**Following Through**FAMACHA:Make sure students understand the reason why we do this test instead of just deworming all small ruminants. Bring up too who students this can administer the test and how someone can go about getting certified in FAMACHA testing. Talking about also why we would use the eye of a small ruminant and not another part of the small ruminant. This is because it is an easy access to the mucous membranes that we are able to look at clearly to make sure we are making the best decision in our herd. Wool activity:Ask the students if they believe that spinning real wool would be this easy and putting back together twizzlers. Talk about what else the process needs that we talked about in the video that we maybe didn’t need in this specific activity.Students can also recall the tools needed in this process to have a successful wool spinning. |
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| Monitoring and Feedback:* Students will understand the importance of the FAMACHA test and how to spin wool.
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| Learning Activities:Introductory small ruminants video (2:33 minutes)FAMACHA activity or wool activity (10 minutes)Post activity discussion and questions (20 minutes) |

# RESOURCES

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| <https://animal.ifas.ufl.edu/smallruminant/> |
| <https://animal.ifas.ufl.edu/media/animalifasufledu/small-ruminant-website/fact-sheets/Goat-Facts-Sheet_Reduced-size.pdf> |
| <https://animal.ifas.ufl.edu/media/animalifasufledu/small-ruminant-website/fact-sheets/Raising-Lambs-Fact-Sheet.pdf> |
| <https://animal.ifas.ufl.edu/media/animalifasufledu/small-ruminant-website/fact-sheets/Deworming-Sheep--Goats-Factsheet-.pdf> |
| <https://www.aasrp.org/Main/Main/Resources/AASRP-Biosecurity-Tool-Kit-Resources.aspx?hkey=63a00c1e-31c3-4b94-b5c4-8050b9e7b6dd> |
| <https://www.sheepusa.org/wp-content/uploads/2023/03/Fast-Facts06-Ecology.pdf> |
| <https://animal.ifas.ufl.edu/media/animalifasufledu/small-ruminant-website/fact-sheets/FAMACHA-Factsheet.pdf> |
| <https://pubmed.ncbi.nlm.nih.gov/30000902/> |
| <https://www.mannapro.com/homestead/raising-fiber-goats-101> |
| chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://iwto.org/wp-content/uploads/2022/04/IWTO-Market-Information-Sample-Edition-17.pdf |
| <https://animal.ifas.ufl.edu/media/animalifasufledu/small-ruminant-website/fact-sheets/Shearing-Sheep-Fact-Sheet_Halbritter.pdf> |
| [https://www.historiclondontown.org/post/carding-wool#:~:text=Every%20spring%2C%20sheep%20were%20shorn,it%20easier%20to%20spin%20smoothly.](https://www.historiclondontown.org/post/carding-wool#:~:text=Every%20spring%2C%20sheep%20were%20shorn,it%20easier%20to%20spin%20smoothly) |
| <https://www.youtube.com/watch?v=ZrcRCIPuoKY> |
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