Southeast Area 4-H Newsletter

COLORADO STATE UNIVERSITY EXTENSION

June 2019

Important 4-H Dates

June

3rd – Sand Dunes Camp

10th -12th – Prowers County Mini Livestock Bootcamps

15th – Modeling Workshop – Otero County

18th - 21st – State 4-H Conference

22nd -30th – Citizenship Washington Focus

26th – Cake Decorating Workshop – Prowers County

29th - D6 Shoot

July

1st & 2nd Art Camp – Otero County

4th – Southeast Area Extension Offices Closed

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411 North 10th Street
Rocky Ford, CO 81067
719-254-7608

Baca County
700 Colorado Street
Springfield, CO 81073
719-523-6971
coopext_baca@mail.colostate.edu

Cheyenne County
Box 395
Cheyenne Wells, CO 80810
719-767-5716
coopext_cheyenne@mail.colostate.edu

Kiowa County
Box 97
Eads, CO 81036
719-438-5321
coopext_kiowa@mail.colostate.edu

Prowers County
1001 South Main
Lamar, CO 81052
719-336-7734
coopext_prowers@mail.colostate.edu

Bent County
1499 Ambassador Thompson
Las Animas, CO 81054
719-456-0764
coopext_bent@mail.colostate.edu

Crowley County
613 Main Street, Courthouse Annex
Ordway, CO 81063
719-267-5243
coopext_crowley@mail.colostate.edu

Otero County
Box 190
Rocky Ford, CO 81067
719-254-7608
coopext_ otero@mail.colostate.edu

Colorado State University, U.S. Department of Agriculture and Colorado counties cooperating. Extension programs are available to all without discrimination. The information given herein is supplied with the understanding that no discrimination is intended and no endorsement by Colorado State University is implied.

Prowers County Mini Livestock Boot Camps

Their back! This year our mini livestock boot camps will be held Monday, June 10th – Wednesday, June 12th starting at 6:00p.m. Come learn from talent from all over southern Colorado. Topics of discussion will include, nutrition, fitting and show prep, what's in my show box, and showmanship. Animals are welcome but not required with the exception of pigs. Our swine presenters have asked that your hogs be left at home unless you would like to weigh on our scales. Scales will be open for respective species on Monday and Wednesday night. Please use this link https://forms.gle/rL9hKGUwRASJ1qFaA to sign up.

Monday, June 10th – Sheep and Goats (scales open)

Tuesday, June 11th – Poultry and Rabbits

Wednesday, June 12th – Cattle and Swine (scales open)

Modeling Workshop

Practice modeling, gain valuable tips and tricks, and get your facial on at the Otero 4-H Modeling Workshop. Kerry Froese, Caryl Pearce, and Sally Cope will lead the fun event with modeling and grooming tips and tricks. Skincare and makeup samples, along with instruction are provided by Mary Kay Consultant Sally Cope.

The modeling workshop will be held on June 15th from 10:00 am-12:00 pm at the Otero Extension Office. Please call 719-254-7608 or email marlena.griesse@colostate.edu to register by June 10th.

Cake Decorating Clinic

New to cake decorating? Just want to grow you skills? Join us in Lamar on June 26th for a cake decorating clinic with clinician Connie Harris. Unit 1 participants' time will be from 9:00 a.m. to 12:00 p.m. Unit 2 and beyond will be from 1:00 p.m. to 4:00 p.m. Each participant will need to bring their own cake, frosting, and tools needed for their specific unit. Please use this link to sign up https://forms.gle/h5G1JCJdREg7kbAM7. Registration deadline is June 21st.

Art Camp

Create masterpieces and learn new techniques in painting, drawing, fiber, leathercraft, and more. Youth will create multiple art projects to take home or enter in their county fair. Art Camp will be held on July 1st and 2nd at the Arkansas Valley Fairgrounds Event Center in Rocky Ford. Each day will run from 9:00 am-3:00 pm. The cost to attend is $40 and the camp is open to ages 11-18. Please register by June 15th by going to https://forms.gle/KTPQTEFuHs6Jd4zM6. For questions, call Marlena at 719-254-7608 or email marlena.griesse@colostate.edu.

Livestock Manuals

Each Southeast Area Extension Office has a library of the livestock/horse/small animal manuals for leaders and members to check out. Manuals may be checked out for two weeks and then must be returned for use by other 4-Hers. Please remember this if you want to review the book before you order or want to save money.

State Fair Exhibit Requirements

The 2019 State Fair Exhibit Requirements have been updated. You can find them at http://co4h.colostate.edu/statefair/StateFairExhibitReq.pdf Please be sure to refer to the exhibit requirements when you are planning on your project, as this is what it will be judged on at both county and state fair.

Project Score Sheets

Score sheets for general and family and consumer science projects, as well as state contests are available on the 4-H website at: http://co4h.colostate.edu/program-areas/state-fair-information/contest-score-sheets/

These sheets will help you know what the judge will be looking for when judging your projects.

Code of Conduct

Colorado State University wants to provide an environment that is safe and proper for all of its 4-H participants. The code of conduct is not intended to restrict participation, but rather to enhance it so that all can receive the full benefit and educational experience from events and activities. The code of conduct spells out how 4-Hers, parents, and leaders are expected to conduct themselves when participating in 4-H activities.

As a reminder, the State 4-H Code of Conduct form was included when you enrolled online. When you signed the enrollment, you were stating that you had read the code of conduct and agree to comply with the rules and regulations set forth in the code of conduct.

The Code of Conduct can be found on the state 4-H website, along with event etiquette and information on sportsmanship for participants, parents, and spectators. Let's all work to make each and every 4-H event or activity a positive experience for everyone involved.

4H Online – Email Blasts

From time to time the State office will be sending emails directly to the 4-H members. It is the easiest and most effective way to communicate important State events and requirements. We know that not everyone particularly enjoys the extra emails and there have been requests to be unsubscribed. It is important to know that if you do that, you would not receive any re-enrollment emails or information the County office sends directly to you. Please do not "unsubscribe."

Colorado State 4-H Shooting Sports

The 2019 Colorado State 4-H Shooting Sports Championships will be held on August 17-18 in the Pueblo area. Please see the following schedule in regards to contest days per age group:

State 4-H Air Rifle, Air Pistol, Muzzleloader & .22 Rifle Contests will be held August 17-18 in Pueblo, CO

- **.22 Rifle -** Sr. - Sat. Aug. 17
- **.22 Rifle -** Jr. - Sun. Aug. 18
- **Muzzleloader -** Sr. - Sat. Aug. 17
- **Muzzleloader -** Jr. - Sun. Aug. 18
- **Air Rifle** - Jr. & Sr. - Both days Sat. Aug. 17 & Sun. Aug. 18
- **Air Pistol** - Jr. & Sr. - Both days Sat. Aug. 17 & Sun. Aug. 18

CHANGE OF VENUE NOTICE: The 2019 Colorado State 4-H Archery Contest will be held August 17-18 at 5000 Cuerno Verde Blvd. in Colorado City, approximately 20 miles south of Pueblo.

- **Archery -** Jr. - Sat. Aug. 17
  Archery - Sr. - Sun. Aug. 18

All 4-H Trap, Skeet, Sporting Clays and .22 Pistol Contests for Jr. & Sr. age groups will take place at the Pikes Peak Gun Club in Colorado Springs, on August 31st & September 1st.

- **.22 Pistol -** Sr. - Sat. Aug. 31
- **.22 Pistol -** Jr. - Sun. Sept. 1
- **Skeet -** Jr. - Sat. - Aug. 31 (Morning)
- **Skeet -** Sr. - Aug. 31 (Afternoon)
- **Sporting Clays -** Sr. - Sat. Aug. 31 (Morning)
- **Sporting Clays -** Jr. - Sat. Aug. 31 (Afternoon)
- **Trap** - Jr. & Sr. - Sun. Sept. 1 (All Day)

A True Leader

A true leader takes responsibility for more than himself.

A true leader gives back to move their community forward.

A true leader looks fear in the face and smiles.

A true leader doesn't step on others to reach their dreams.

A true leader finds a solution.

A true leader sees life as a true activity.

Bent County 4-H Newsletter

JUNE 2019

FAIR ENTRY

Fair entry will be open from **May 19, 2019 to June 19, 2019**. If you already have a family account with 4HOnline, you will be able to log in with the same username and password.Please DO NOT create a new account if you have a family account in 4HOnline already! Fair Entry can be accessed at https://fairentry.com/Fair/SignIn/2422 If you need help or have to re-set your password for your 4HOnline account, please contact the Extension Office. The Fair Entry Login Process can be accessed HERE or it is attached to this newsletter.

OPPORTUNITIES AND DEADLINES

June 1st - Small Animal State Fair Nominations Due

June 9th - Shooting Sports Practice

June 10th - Record Book Workshop

June 10th - Rabbit/Poultry Workshop

June 13th - Creative Cooks Contest

June 18th-21st - State 4-H Conference

June 19th - Fair Entry Deadline

June 22nd-29th - CWF

June 24th - Quilt Workshop

June 29th - District Shoot

July 1st - Fair Entry Written Corrections Deadline

July 1st - Fashion Review Narrative Due

July 8th - Record Book Workshop

July 10th - Shooting Sports Workshop

July 18th-26th - Bent County Fair

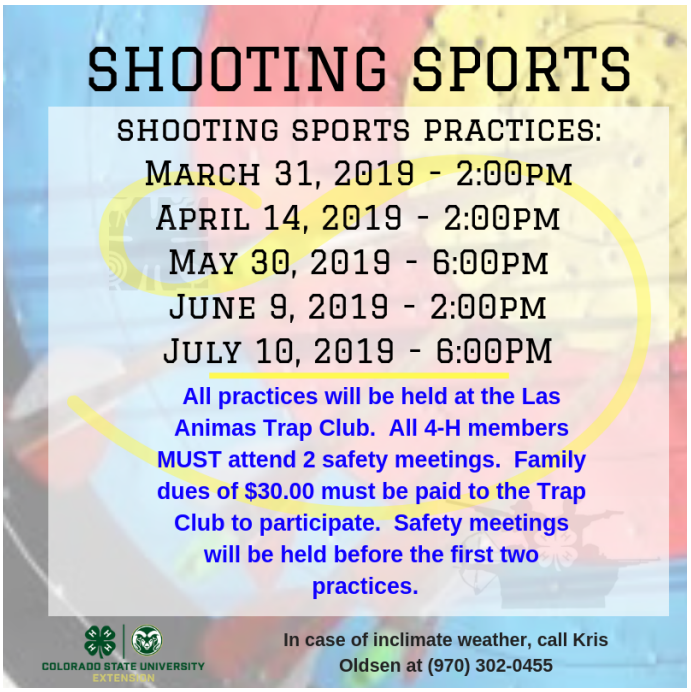
CREATIVE COOKS AND CAKE DECORATING

Express your creativity at the District VI Creative Cooks and Cake Decorating Contests! Both contests will be held at the fairgrounds in Lamar on June 13th. Set up for the contests will start at 5:00 pm and the contests will start at 6:00 pm. During the Cake Decorating Contest, youth are given the opportunity to show off their skills while decorating a cake in a given amount of time. The Creative Cooks contest allows youth to plan a menu, set a place setting, cook a dish, and participate in an interview with the judge. Judging is based on creativity, taste, and visual appeal, among other factors. Complete contest requirements can be found at www.colorado4h.org.

We hope to see you all there! For more information or entry forms, contact the Bent County Extension Office. Entries are due to the Bent County Extension Office by May 31st.

4-H WORKSHOPS

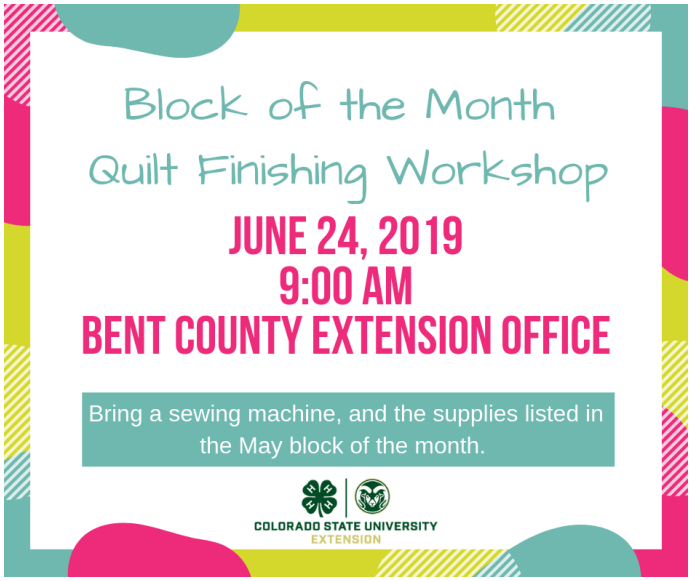
SHOORTING SPORTS PRACTICE/SAFETY MEETINGS



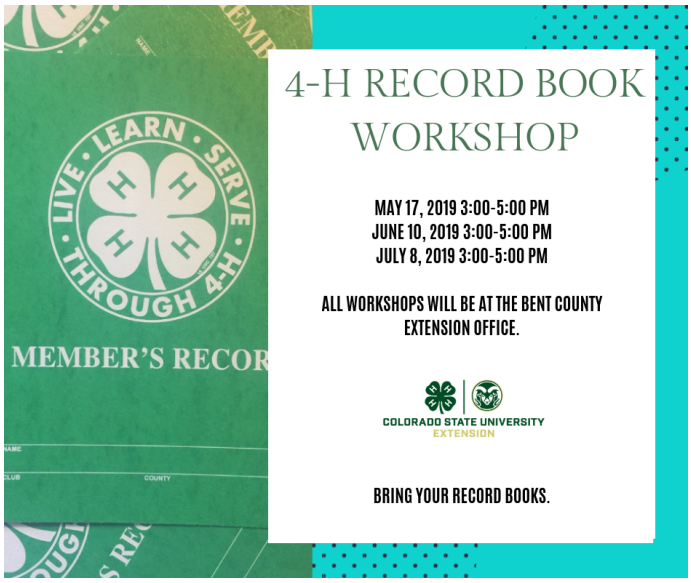
The next shooting sports workshop will be June 9th at 2 PM.

QUILT FINISHING WORKSHOP

Attention quilters: if you have participated in the block of the month program please plan to attend the quilt finishing workshop. It will be on June 24 beginning at 9 AM at the Bent County Extension Office. You will need your sewing machine, along with all the supplies listed in Block of the Month page attached to the newsletter.



RECORD BOOK WORKSHOP



If you need help with your record book, please plan to attend one or more of the record book workshops this year! All of the workshops will be at the Bent County Extension Office. Don't forget to bring your record book with you!

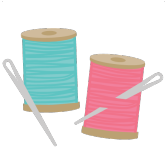
RABBIT/POULTRY WORKSHOP

David and Ashland Crossland will be putting on a rabbit/poultry workshop on June 10th from 5:30 to 7 PM at the Bent Count Fairgrounds. Meet under the covered arena, and bring your animal.

MINI LIVESTOCK BOOT CAMP

If you are interested in participating in the Prowers County Mini Livestock Boot camp please register HERE. You must use the link to sign up. The clinic will be on June 10th-12th starting at 6:30 PM, and is free to all. The clinic will cover topics that include nutrition, basic care, show day prep, clipping tips, show ring etiquette, and much more!

BENT COUNTY FASHION REVIEW



The Bent County Fashion Review will be held at the Bent County Community Center on July 22nd beginning at 8 PM. This years theme is "Hollywood". You must register for the fashion review on FairEntry!! The deadline to enter is June 19th. Attached to the newsletter is the Fashion Review Narrative that must be completed and turned into the Bent County Extension office by July 1st. Decorating and rehearsal will be on July 22nd at 3 PM.

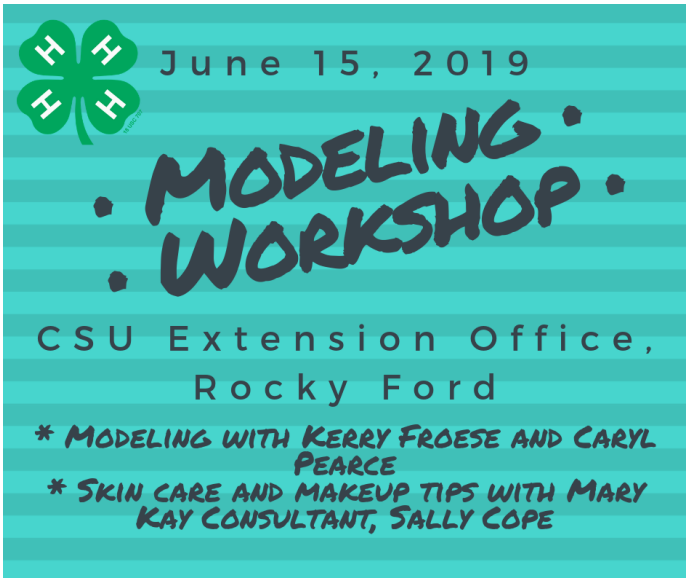
DOG WORKSHOPS

All dog workshops will be on Mondays @ 5:30 PM and Fridays at 7:30 AM. They will cover rally and obedience. Workshops will be at the Bent County Fairgrounds under the covered pavillion.

MODELING WORKSHOP

Practice modeling, gain valuable tips and tricks, and get your facial on at the Otero 4-H Modeling Workshop. Kerry Froese, Caryl Pearce, and Sally Cope will lead the fun event with modeling and grooming tips and tricks. Skincare and makeup samples, along with instruction are provided by Mary Kay Consultant Sally Cope.

The modeling workshop will be held on June 15th from 10:00 am-12:00 pm at the Otero Extension Office. Please call 719-254-7608 or email marlena.griesse@colostate.edu to register by June 10th.



DISTRICT VI 4-H SHOOTING SPORTS COMPETITION

Mark your calendars for the 3rd annual District VI 4-H Shooting Sports Contest. It will be Saturday, June 29th, 2019 at the La Junta Rifle Club. Entry will open May 15th in 4-H Online, and close June 15th. Events offered include .22 rifle, .22 pistol, archery, shotgun, muzzle-loading, and air rifle. You can only enter events for which you are enrolled in 4-H. You must bring your own ammunition. This is an individual contest, and there will not be teams. The cost is $5 per discipline (payable to DVI 4-H Senate). There will be a lunch of hot dogs and hamburgers provided, but please bring side dishes for a potluck. Water will be available on grounds. For more information contact Marlena Griesse at 719-469-0190.

ALL ABOUT ANIMALS

June 5th
9:00 am - 3:00 pm
Arkansas Valley Fairgrounds

Explore companion animal careers and opportunities!

Ages 8-13

Outdoor Skills

June 11th
9:00 am - 3:00 pm
Ordway

June 12th
9:00 am - 3:00 pm
Rocky Ford

Ages 8-13

Crowley & Otero 4-H
SUMMER DAY CAMPS

COLORADO STATE UNIVERSITY EXTENSION

OPEN TO ALL YOUTH

GET YOUR GEEK ON

June 25th
9:00 am - 3:00 pm
Ordway

June 26th
9:00 am - 3:00 pm
Rocky Ford

Ages 8-13

ART CAMP

July 1st & 2nd
9:00 am - 3:00 pm
Arkansas Valley Fairgrounds

Learn new techniques in a variety of mediums!

Ages 11-18

Crowley & Otero 4-H
SUMMER DAY CAMPS

Registration closes **May 22nd** *at 4:30 pm. Registration is not complete until fees have been received in the Crowley or Otero Extension Office. No refunds will be given after May 22nd.*

Register at:
https://forms.gle/KTPQTEFuHs6Jd4zM6

ALL ABOUT ANIMALS

Explore companion animal careers and opportunities! Youth will participate in hands-on activities with animals, community service, and make their own pet first aid kit to take home.

Date: June 5th
Location: Arkansas Valley Fairgrounds Event Center, Rocky Ford
Cost: $25
Ages: 8-13

Outdoor Skills

Use your five senses and experience the world around you! Youth will participate in activities centered around fishing, hiking, and safety, and will make a first aid kit to take home. The camp includes a field trip to Lake Meredith or Rocky Ford Wildlife Area.

Location: June 11th, Crowley Extension Office, Ordway; June 12th, Otero Extension Office, Rocky Ford
Cost: $25
Ages: 8-13

GET YOUR GEEK ON

Learn about the science behind weather systems and our climate. Youth will participate in science experiments, observational activities, and create their own weather station to take home.

Location: June 25th, Crowley Extension Office, Ordway; June 26th, Otero Extension Office, Rocky Ford
Cost: $25
Ages: 8-13

ART CAMP

Create masterpieces and learn new techniques in painting, drawing, fiber, leathercraft, and more. Youth will create multiple art projects to take home or enter in the Arkansas Valley Fair.

Date: July 1st & 2nd
Location: Arkansas Valley Fairgrounds Event Center, Rocky Ford
Cost: $40
Ages: 11-18

Registration covers supplies, a snack, and a project/s to take home. Youth should plan to bring:
***Sack lunch** ***Water** ***Excitement to learn!**

COLORADO STATE UNIVERSITY EXTENSION

Colorado State University, U.S. Department of Agriculture and Southeast Area (Baca, Bent, Cheyenne, Crowley, Kiowa, Otero and Prowers Counties) cooperating. Extension programs are available to all without discrimination.

BENT COUNTY 4-H FASHION REVUE

Monday, July 22nd at 8:00 pm
Bent County Community Center

Fashion Revue Narrative

Due on July 1, 2019

Theme – "Hollywood"

NAME_____ YEARS IN 4-H_____

PROJECT_____UNIT_____ AGE (as of 12/31/18)_____

Write a short description of your garment (color, fabric content, style description, pattern name and number, etc.) and accessories (white patent leather sandals, white pearl beaded necklace, etc.) which will be read as you model. Include your name, parents or guardians names, club name, project, unit number, and anything that is interesting about you that you want to share (other 4-H projects, a hobby, etc.) When you wear your garment, what do you imagine that you would like to do when you wear it? (Examples – "When I wear my party dress, I imagine that I am having tea with the Queen." "When I wear my pajamas, I imagine that I am at a slumber party with my best friends watching scary movies." "When I wear my leather vest, I imagine that I am going to ride a bucking bronc in the rodeo.")

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Please limit your description to the above amount of space.

ENTRY DEADLINE: JUNE 19th **Stage decorating and rehearsal – July 22nd at 3:00 pm**

Block of the Month

COLORADO STATE UNIVERSITY EXTENSION

Finishing your quilt

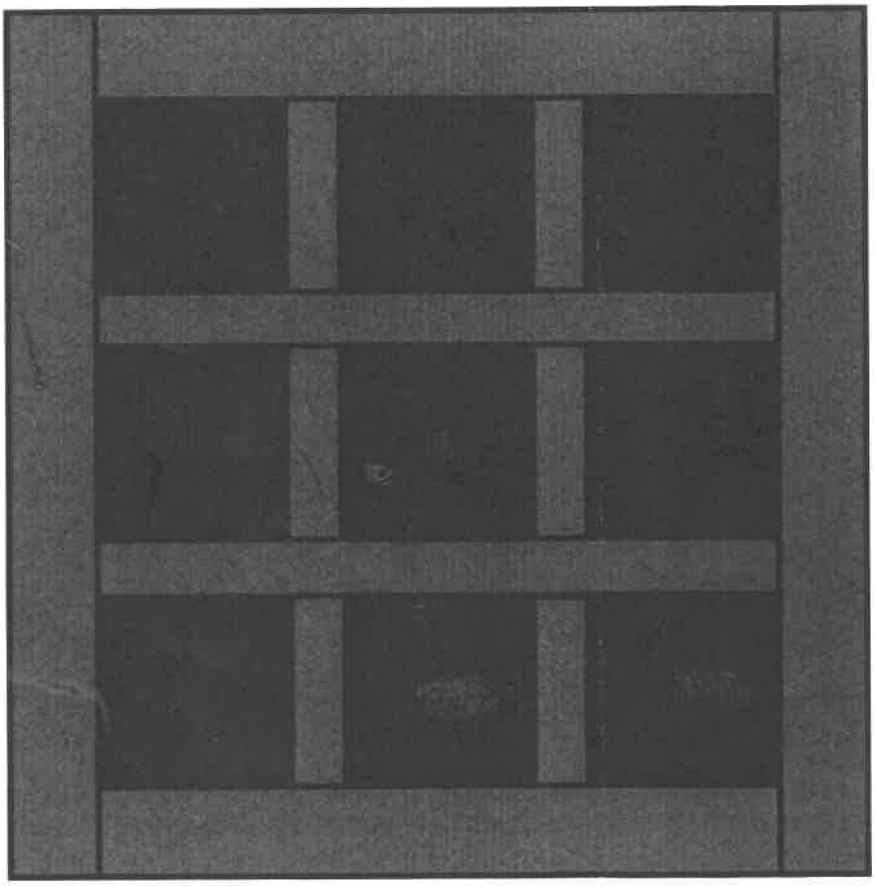
To finish your quilt, you will need the following supplies:

- 3 ½ yds of backing and binding fabric
- 1 ½ yds of sashing fabric (for borders)
    - This is where you can be creative, Spoonflower.com has TONS of options to coordinate with your quilt blocks
- Thread that matches your backing and binding fabric
- Coordinating yarn for tying your quilt
- Twin size cotton batting
- Spray adhesive (can be specific for quilts, or regular crafting spray adhesive)

Final Workshop Dates (please let Marlena know which you will be attending by June 3rd by emailing marlena.griesse@colostate.edu)

- Otero County: June 10th, 9:00 am-12:00 pm
- Bent County: June 24th, 9:00 am-12:00 pm

Your finished quilt will look like this:



Inner sashing strips are 3 ½" wide. Outer border is 5 ½" wide.

Yes, This IS Rocket Science! Part 1

Colorado State University Extension

4-H STEM
Science, Technology, Engineering & Math

Did you ever wonder how rockets can get into space? How do rocket fuels work?

Let's see if we can figure that out!

What you need to gather:

- Film canisters with lid (try to get several different kinds)
- Paper
- Pencil
- Alka Seltzer (at least 12)
- Water
- Tape measure
- Pencil
- Safety glasses
- Color pencils

Optional:

- chalk

Activity 1: Liftoff

1. All these experiments work best outside. If you have permission, use next to a building, and mark with chalk how height the canister travels.
2. Test which canister works the best. Keep all the variables exactly the same (use the exact same amount of water, and the exact same amount of Alka Seltzer).
3. Guess which film canister will travel the highest.
4. SAFETY: Put on your safety glasses.
5. Break the Alka Seltzer into quarters.
6. Fill each film canister ¼ full of water.
7. One at a time, add the ¼ piece of Alka Seltzer, snap on the lid, and turn upside down (so that the canister is sitting on the lid). It will be messy.
8. SAFETY: Stand back, and observe the height travelled.
9. Mark the height with chalk, and measure with a tape measure. Record the height.
10. With the same canister, repeat two more times.
11. Test each additional film canister, duplicating the process above in steps 4-10.
12. Find the average of the three trials for each of the canisters. Which one had the highest flight? Which one had the highest average flight? Was your guess right?
13. Make a graph of your results (free graph paper on the internet). The X axis is the individual canister and the Y axis is height. Use a different color pencil for each canister, and plot your average height for each canister. Write about what you learned.

Activity 2: Proper Fuel Mix

1. Test the proportions of water to Alka Seltzer for the best fuel mix. **Only change one variable at a time.**
2. Use the winning canister from Activity 1 and ¼ piece of Alka Seltzer for all these trails, only change the amount of water.
3. Guess which canister will shoot the highest.
4. SAFETY: Put on your safety glasses.
5. Break the Alka Seltzer into ¼ pieces.
6. Fill the canister ½ full of water.
7. Add the Alka Seltzer, snap on the lid, and turn upside down. SAFETY: Stand back.
8. Observe and mark the height with chalk, and measure with the tape measure. Record the height.
9. Repeat the trial two more times with ½ water.
10. Repeat steps 4-9 three times with the canister ¾ full of water, and record the height after each trial.
11. Repeat steps 4-9 three times with the canister almost full of water, and record the height after each trial.
12. What amount of Alka Seltzer will work best? Guess which canister will shoot the highest.
13. Break the Alka Seltzer into ½ pieces.
14. Fill the film canister ¼ full of water.
15. Add Alka Seltzer, snap on the lid, turn upside down.
16. Mark the height with chalk, and measure with a tape measure. Record the height.
17. Repeat the trial two more times.
18. Break the Alka Seltzer into ¼ pieces, and use three ¼ pieces. Repeat stems 13-16 with ¾ a tablet (3 – ¼ pieces) of Alka Seltzer.
19. Use an 1 tablet of Alka Seltzer. Repeat stems 13-16 with 1 tablet of Alka Seltzer.
20. Find the average height that rocket travelled for the different water levels (½, ¾, and almost full) and the different sizes of Alka Seltzer (½, ¾, or 1).
21. Make two graphs of your results. Include the data from Activity 1, for ¼ full of water with ¼ piece of Alka Seltzer. For the first graph, the X axis is the amount of water (¼, ½, ¾, or 1). On the second graph, the X axis is the amount of Alka Seltzer. (¼, ½, ¾, or 1). On both graphs, Y axis is height. Write about what you learned.
22. Save your canister for next month's Rocket Science!

Source: http://www.spacegrant.hawaii.edu/class_acts/AlkaRocket.html

Colorado State University, Pueblo: Dr. Richard Farrer
My two main research interests are 3-d lithography and the interaction of nanoparticles with cells (collaboration with Dr. Jeff Smith—biology). The underlying theme in both projects is nanoparticles. The majority of circuitry used in electronic devices is flat (2-d), and created through current lithographic techniques. While current lithography produces very small circuits in 2-d, it cannot produce 3-d circuits. Two of the advantages of 3-d microcircuits are reduced size and increased functionality — producing 3-d electronics allows for the creation of electronic components that cannot be produced in 2-d. The work with Dr. Smith involves creating nanoparticles that will interact selectively with cells as means of drug delivery.

If you liked these experiments, 4-H has other activities in Model Rocketry. Check out these projects at:
http://www.colorado4h.org/project_resources/gnr-projects/rocketry/index.shtml
Colorado State University Extension 4-H programs are available to all without discrimination.

Yes, This IS Rocket Science! Part 2

Colorado State University Extension

4-H STEM
Science, Technology, Engineering & Math

Does the shape of the nosecone affect the flight? Do the shape of the fins affect the flight? How about the length of the fuselage?

Let's see if we can figure that out!

What you will need to gather:

- Tested film canister (from part 1)
- Paper
- Pencil
- Alka Seltzer
- Water
- Tape measure
- Scissors
- Scotch tape
- Pencil
- Safety glasses
- 5x8" index cards
- Color pencils
- Styrofoam meat tray

Optional:

- chalk

Activity 1: The Nose Cone

1. We are testing the most effective nosecone for your Alka Seltzer rocket.
2. Optional: decorate the index card.
3. Use the canister you picked as the best from Part 1, Activity 1. Roll the index card into an 8-inch-tall tube around the film canister, with the open end of the canister flush with the bottom of the index card. If your film canister has a lid that closes on the outside of the canister, be sure that your index card is flush with the lip on the lid (so you don't have to close the lid on the paper).
4. Tape the index card tube to the canister. You do not want these two parts to separate.
5. Tape the 8-inch-long seam of the paper tube.
6. Cut three triangular fins from a Styrofoam meat tray and tape them onto the rocket. (We will be testing fin design later.)
7. Make a small paper cone and tape it to the top of the rocket. (What is the function of the nose cone?)
8. Guess what nosecone design will give you the best flight (think about long, wide, streamline, etc.).
9. Test using the water/Alka Seltzer fuel ratio you determined gave the best projection from Part 1, Activity 2. Remember to record the height your rocket travelled.
10. In engineering challenges, try to think outside the box while designing the best nosecone. Remember to leave everything else the same. If your fins or fuselage need to be repaired or replaced, use the same design. You will modify those later. Keep your data, and always run 3 trials. Take your averages and graph your results.

Activity 2: The Fins

1. Once you have your favorite nosecone design, you can test the fin shape. What do fins do?
2. Guess which fin design will give you the best flight (think about how long, wide, placement on the fuselage, number of fins, etc.).
3. Cut three fins from a Styrofoam meat tray, changing the shape, and tape them onto the rocket.
4. Test using the water/Alka Seltzer fuel ratio you determined gave the best projection from Part 1, Activity 2. Remember to record the height your rocket travelled for 3 trials of each design.
5. Leave everything else the same. If your nosecone or fuselage need to be repaired or replaced, use the same design. Record your data, and always run 3 trials for each design. Find your averages and graph your results.

Activity 3: The Fuselage

1. You now have determined the best nosecone and fins. Is the length of your fuselage optimum?
2. Guess what length fuselage will work best.
3. Try longer (9, 10") and shorter (7, 6") lengths, testing each length 3 times, and recording the height for each trial.
4. Remember to leave everything else the same. If your nosecone or fins need to be repaired or replaced, use the same design. Record your data, and always run 3 trials. Find your averages and graph your results.

Source: http://www.spacegrant.hawaii.edu/class_acts/AlkaRocket.html

Colorado State University—Dr. Paul Wilber

Prof. Wilbur has taught courses in aeronautics and space propulsion for many years. He does research on ion propulsion of space vehicles. Ion thrusters use electrical power derived from the sun (through photovoltaic cells) or from nuclear-electric power-plants to accelerate positively charged ions to very high velocities. Typically the resulting thrust is low and the thrusters are operated for long periods of time. They are very efficient. Ion thrusters are currently being used to position Earth satellites and to propel the Dawn Spacecraft to the planetoids Ceres and Vesta.

If you liked these experiments, 4-H has other activities in Model Rocketry. Check out these projects at:
http://www.colorado4h.org/project_resources/gnr-projects/rocketry/index.shtml

Colorado State University Extension 4-H programs are available to all without discrimination.