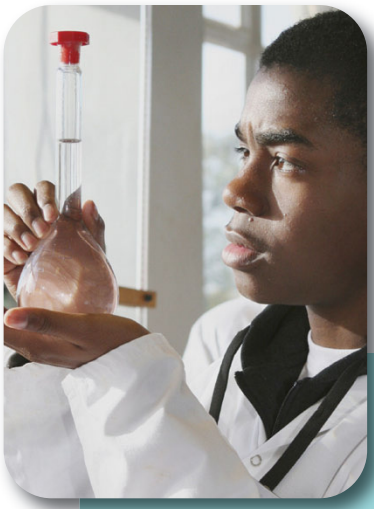
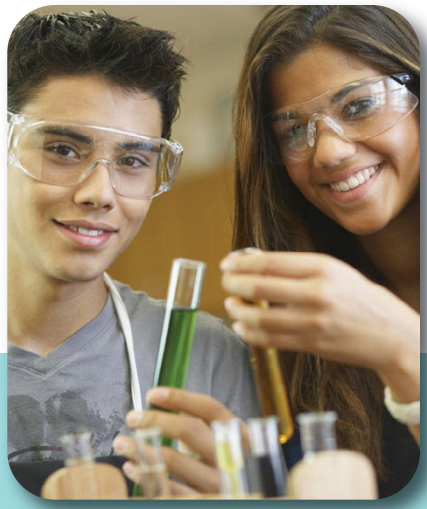
4-H Science

4-H Science Smart


Competency
Training Guide

PEER REVIEWED

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4-H Science Smart Competency Training Guide

Welcome to the *4-H Science Smart Competency Training Guide*. The purpose of this training is to help youth development professionals and volunteers:

- Become familiar with the 4-H Science Competencies and Tools
- Explore how these tools can be used in their work
- Identify their own strengths and areas where they wish to improve

About the 4-H Science Core Competencies

The 4-H Science Core Competencies are eight elements we've identified that are essential in assisting 4-H youth development workers be competent and caring resources to youth, organizations, and communities.

4-H intentionally designs successful youth development programs and services around these specific ingredients. Those ingredients are called the *Essential Elements*. Each of the eight *Essential Elements* is vital to the positive development of

youth. When 4-H professionals and volunteer leaders intentionally focus on these elements, youth derive long-term benefit from their 4-H membership.

They are:

- Caring Adults
- A Safe Environment
- An Inclusive Environment (Belonging)
- See Oneself in the Future (Sense of Hope)
- Values and Practices Service to Others
- Opportunities for Self-Determination
- Opportunities for Mastery
- Engagement in Learning

For more general training activities for each of the eight *Essential Elements* go to: ***www.4-h.org/essential-elements/***

Development of the 4-H Science Competencies

The *4-H Science Smart Competency Training Guide* has been developed over a number of years. The 4-H Science Professional Development Team worked to identify, develop and test a set of simple tools to be used within the 4-H system and beyond. This training provides an opportunity to get familiar with these tools, which are:

- The 4-H Science Competencies
- The 4-H Science Competency Self-Assessment
- The 4-H Science Competency Cards

About the Training Activities

The *4-H Science Smart Competency Training Guide* consists of five activities:

ACTIVITY 1: **Getting Started (25 minutes)**
Participants are introduced to the 4-H Science Smart Competency Training Agenda and have an opportunity to meet the trainers and participants.

ACTIVITY 2: **The 4-H Science Competencies (45 minutes)**
Participants learn about and discuss the eight competencies. They will have the opportunity to identify which ones they are most comfortable with or best at facilitating while leading 4-H Science programs.

ACTIVITY 3: **The 4-H Science Competency Self-Assessment (25 minutes)**
Participants take the 4-H Science Competency Self-Assessment and discuss what they learn about their strengths and areas they'd like to improve.

ACTIVITY 4: **The 4-H Science Competency Cards (35 minutes)**
Participants use the 4-H Science Competency Cards as observation tools. This activity provides an opportunity for participants to observe how a facilitator uses the cards and discuss what they observe.

ACTIVITY 5. **Closure and Evaluation (20 minutes)**
The final activity provides participants with an opportunity to ask any questions not addressed in the workshop, provide feedback and consider how they will apply what they've learned going forward.

Facilitators

If possible, more than one facilitator should lead this training. Having the expertise, background and style of more than one person provides a richer experience for everyone.

The training is designed to promote hands-on interaction, allowing each of the participants the opportunity to familiarize themselves with the tools by experiencing them personally. As a result, the flow and focus of the discussion for each activity may sometimes shift in directions. It will be important for facilitators to tune into these fluctuations and make the appropriate recommendations to keep the training relevant and on target.

In the activities, participants will use each tool as it relates to their own personal competencies and observations. As the facilitators, it may be necessary to remind participants to experience the tools as caring adults first before they begin to think about applying them to the professional development of their own staff and volunteers. Experiencing them personally will provide them with a deeper understanding of the competencies and themselves, ultimately equipping them to consider the professional development applications more effectively.

Audience

The 4-H Science Competency Training is intended for 4-H professionals, volunteers, teen leaders and others who want to learn more about the 4-H Science Competency Tools. As you prepare, consider how your audience will interact with you and the materials.

- *What is their role in 4-H Science?*
- *How diverse is your audience?*

- *Do you have people with many different roles participating?*
- *What other differences are there in the audience?*
- *Are there different ages, cultures and backgrounds, or familiarity with science, 4-H or youth development among the group?*

It is important to pay attention to these differences to ensure your training meets the needs of your audience.

Every audience brings with them their own experiences and questions. Your training will be enriched if you encourage them to share both with you and with each other.

The training is designed to have people work together in small groups. Being part of a group promotes opportunities for participants to share what they know and connect new experiences to prior knowledge. It also gives them an opportunity to learn from others in informal ways. Encourage discussion and sharing among the groups.

As you facilitate the modules, you may find it necessary to make modifications and tailor the questions you use to your audience. For example, you may address a group of volunteers with experience working with youth differently than one well-versed in science. Sometimes good questions build on a group's experiences. Other times they can lead them into unfamiliar territory.

In this program, silence is not golden! Consider ways in which you can encourage participants to communicate and connect with each other, as well as with you, the facilitator. This network will be a valuable "take home" for participants long after the training has concluded.

Context and Abilities

All groups are not created equal. You will find that some groups will have more knowledge of science and may be able to provide valuable insights to other participants. Others may have difficulty seeing or hearing the facilitator. Some groups may need you to adapt your training in different ways, such as reading instructions out loud.

There will be many ways the 4-H Science Competency Training Activities can be adapted to meet the particular needs of your audience. It is important that as a trainer, you are observant and consider individual differences, then adapt accordingly.

- *How can you plan to assist learners with mobility issues?*
- *What changes can you make to your presentation to accommodate visual or hearing impairments?*
- *What other special needs may your audience have that cannot be observed immediately?*

Keep in mind that at every step you are not only facilitating the training, you are also modeling the training methods that they will bring back and apply to their own programs. Demonstrating techniques for adapting the training to best meet the needs of all learners will encourage them to do the same when they work in their own communities.

Getting Started

PURPOSE:

To introduce the session and increase knowledge about the purpose and agenda

TIME:

25 minutes

MATERIALS:

A handout, flipchart or PowerPoint presentation outlining the agenda

TRAINER NOTES:

STEP 1: Explain the purpose of the session.

Working with young people in 4-H Science requires a range of facilitator competencies. What you will experience over the next couple of hours is a list of key competencies we've identified for implementing 4-H Science. Each one combines the context of youth development and the content of science in a usable and simple approach. The framework used is based on research and one familiar to the 4-H system—the *Essential Elements*.

4-H intentionally designs successful youth development programs and services around specific ingredients. Those ingredients are called the *Essential Elements*. Each of the eight *Essential Elements* is vital to the positive development of youth. When 4-H professionals and volunteer leaders intentionally focus on these elements, youth derive long-term benefit from their 4-H membership.

In this training, you will become acquainted with, through hands-on activities, the 4-H Science Competencies developed by the 4-H Science Professional Development Team. I invite you to consider your own strengths and how you might be able to use these tools in your own work.

With so much room for discussion in this training, it will be important for the trainer to maintain a balance throughout the program. Tune into the progress and the process of each activity and be ready to shift the flow if it drifts from focus:

- ***Personal – talking about how this competency relates to him/herself or***
- ***Application – how they will use the tools with their staff or volunteers.***

In addition, it might be useful to remind participants that they need to experience the tools as caring adults first and professional development professionals second.

STEP 2: Introduce the facilitators and participants.

Trainers should introduce themselves and give some context to their connection with the topics covered and provide an opportunity for participants to introduce themselves by giving their name, organization and role within that organization.

STEP 3: Review the agenda.

Describe each activity in the agenda. Emphasize that these hands-on activities are designed to help participants familiarize themselves with the tools and provide an opportunity for in-depth discussion and sharing between the participants. As they engage in these activities, participants will have an opportunity to make choices based on their expertise, assess their own competency and observe a facilitator either in a video or in person.

STEP 4: Transition to Activity #2.

Let's experience the first of the three tools to be covered—an introduction to the eight competencies. Distribute the 4-H Competencies Handout. Please refer to your handout for our next activity.

HANDOUT

4-H Science Smart Competency Training Agenda

ACTIVITY 1:
Getting Started
(25 minutes)

ACTIVITY 2:
The 4-H Science Competencies
(45 minutes)

ACTIVITY 3:
The Competency Self-Assessment
(25 minutes)

ACTIVITY 4:
The 4-H Science Competency Cards
(35 minutes)

ACTIVITY 5:
Closure and Evaluation
(20 minutes)

The 4-H Science Competencies

TIME: 40 minutes

MATERIALS:

Handouts –
Comfort – Which One?
4-H Science Competencies
Target Impact

8 sheets of flipchart paper, each one displaying the name one of a competency in large type. Post each page around the room, leaving enough room for people to comfortably gather around each one.

- Caring Adult
- Safe Environment
- Inclusive Environment (Belonging)
- See Oneself in the Future (Sense of Hope)
- Values and Practices Service to Others
- Opportunities for Self-Determination
- Opportunities for Mastery
- Engagement in Learning

PURPOSE:

To help youth development professionals and volunteers:

- **Become familiar with the 4-H Science Competencies and Tools**
- **Identify their own strengths and areas they want to improve**
- **Identify how these tools can be used in their own work**

TRAINER NOTES:

STEP 1: Explain the context of the 4-H Science Competencies.

The development and sustainability of 4-H Science programs could not exist without the help of caring adults in a community. In order to be successful they must be competent and effective facilitators who can carefully choose activities that encourage the learning of science.

This training focuses on a needed intentional component—sometimes missing, yet a key factor in the sustainability of high quality—the staff and volunteers who work with children and youth and the skills they need to successfully implement 4-H Science.

Distribute the Comfort – Which One? Handout to each participant.

We are going to begin with having you think about a situation in which a 4-H agent is hired to work with volunteers to incorporate more science into their work.

- Please take the handout.
- Determine which answer you think best fits this situation.
- Write your justification.

You have five minutes to do so and then we will ask you to partner with another participant to discuss and share what you wrote.

Give participants 5 minutes while the room is quiet to determine which answer they think makes the most sense and write their justification for their answer. After 5 minutes, remind participants to choose a partner and discuss their decision and justification. Once you have given them a few minutes to share, ask for a couple of justifications.

Why do you think we have you consider this situation and possible answers?

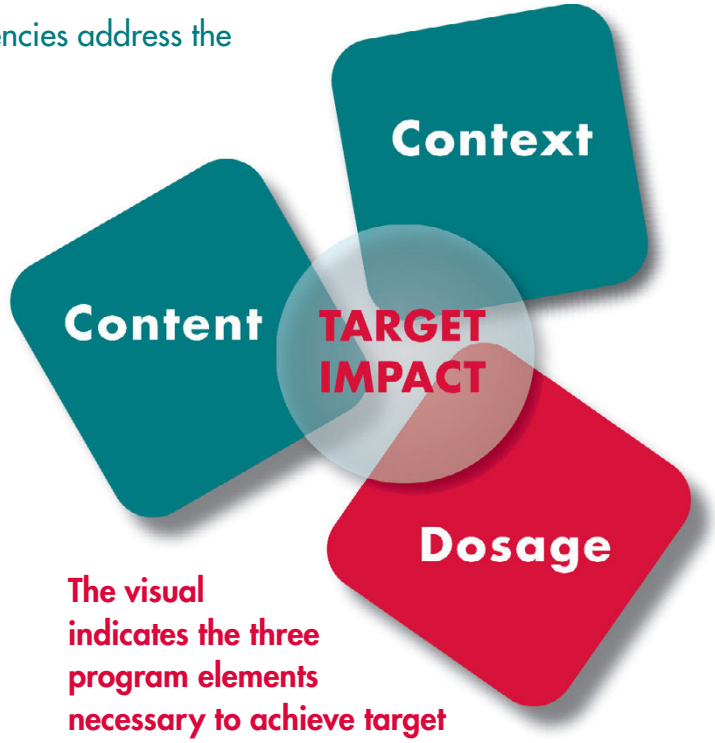
These questions are the same ones that faced the 4-H Science Professional Development Team and why they thought it was important to identify the core competencies that are critical for 4-H Science. Everyone can and will see this in different ways for their own local work, but, at least with some framework and guidelines, our work can continue to improve, support the staff and volunteers doing the work and result in the quality we all strive to deliver.

Programs can only achieve intended outcomes with trained and caring staff. Highly effective professional development results from a competency-based framework that identifies what needs to be learned in order to effectively implement quality, like the framework presented in this workshop.

There is no expectation that one person would have all of these competencies. It is quite likely that one would need to partner with others—particularly as it relates to science content which you will see is not covered in these competencies.

The 4-H Science Professional Development Competencies address the important components of any 4-H Science program.

Give participants the Target Impact Handout and give them a moment to look at it and read the explanation. Then explain what the context, content and dosage represent in the handout. Also explain that in this instance it is related to 4-H Science but it could be any topic that you expect to really have youth learn and apply the lessons learned.



The visual indicates the three program elements necessary to achieve target impact: research-based content, positive youth development context and appropriate dosage.

In 4-H Science, we are combining at least three components:

Context – Youth development

Content – Science

Dosage – Dosage represents the frequency, intensity and duration for which youth are engaged in a program. We need to make sure youth are sufficiently engaged with sufficient intensity and duration for them to learn, to make adequate progress and be able to apply the intended lessons learned.

Ask a couple of questions to have participants reflect on the handout like:

- ***What does this say to you and your work in 4-H Science?***
- ***How might this information help others who are trying to understand what might make 4-H Science different?***
- ***How could you see yourself using this handout with others you work with?***

When we think about the outcomes we want for young people, we know that a critical factor is the adult who works with them. Each of the competencies are a combination of youth development and science. We encourage facilitators to use these competencies to work with youth intentionally and sufficiently in order to reach the outcomes we hope to accomplish from the 4-H Logic Model.

STEP 2: Introduce the competencies.

Distribute the description of competencies to each participant.

Please take a moment to read through this piece and think about each competency in your own work with youth. Note that these competencies are not about the young people. They are about you, the adults who work with children and youth.

Be silent for a couple of minutes while people are reading. Wait until you see most of the heads raised or that participants are not reading any more.

Now that you have skimmed through these competencies, please observe that around the room, each one is written on a sheet of flipchart paper.

If possible, walk around the room and read each one out loud, indicating where it is located. When you provide direction for this activity, note if anyone is physically unable to complete this exercise. If so, revise the directions as needed to ensure everyone is included.

I want you to choose one competency—the one that you are most comfortable with or best at facilitating while leading 4-H Science programming. This is not an evaluation or something you will be held responsible for. Go with your gut reaction.

After you physically move to the competency you have selected, I want you to share with the others who are standing with you why you chose that competency. Select a representative for your group who will share your key findings.

Give people time to get to their competency and share with other participants. Once they have had a few minutes get their attention. Go to each competency and have a representative share the key things that were discussed by the people in his/her group. Then ask people to take their seat.

STEP 3: Reflect on the group's findings.

- *What was this activity like for you?*
- *How did it help you become more familiar with the competencies?*
- *How do you think others who work with you would react to these competencies?*
- *How might you use this activity with those you work with to introduce these competencies?*

STEP 4: Transition to Activity #3.

The tool you have been working with is just one of three that are designed to help people understand and use the 4-H Science Competencies. Now we are going to explore the second tool—a self-assessment tool for the competencies.

HANDOUT

Comfort – Which One?

Julie Jones is a university faculty member and a newly-hired 4-H agent in Runamucca County. In graduate school, she was trained in animal science. However she has not used some of the material she learned since then. She is a bit intimidated by training volunteer leaders on how to incorporate more science in their work with 4-H participants.

Which is true of this situation?

Julie is expected to know everything about every science topic because she is a university faculty member.

Julie can learn how to teach science along with volunteers because no one can know it all.

Julie will need to bring in a content specialist to teach leaders in their specific areas about the science behind the program.

Julie doesn't need to know about the science as much as she needs to know how to foster positive youth development.

Provide a justification in the space below to support your answer:

How did you decide which explanation was best?

HANDOUT

4-H Science Core Competencies

The 4-H Science Core Competencies identify how 4-H youth development workers can be competent and caring resources to youth, organizations, and communities. 4-H youth development professionals and volunteers implement 4-H Science programs that offer the following eight essential elements.

Caring Adult

Person benefits from a positive relationship with a caring adult by:

1. Communicating the capacity of all youth to learn and experience success
2. Willing to learn alongside youth
3. Being comfortable not having all the answers
4. Demonstrating support for all youth, regardless of their challenges
5. Understanding and caring about youth and their families
6. Appreciating the context in which youth and families live

Safe Environment

Creates an emotionally and physically SAFE learning environment by:

1. Modeling strategies for conflict resolution
2. Encouraging youth to share new ideas and different perspectives
3. Modeling and facilitating how to give and receive constructive criticism

4-H Science Core Competencies

Inclusive Environment (Belonging)

Designs inclusive learning environments by:

1. Promoting teamwork and cooperation
2. Providing opportunities for youth to teach and learn from each other
3. Demonstrating respect for others
4. Fostering an environment of mutual respect for others

See Oneself in the Future (Sense of Hope)

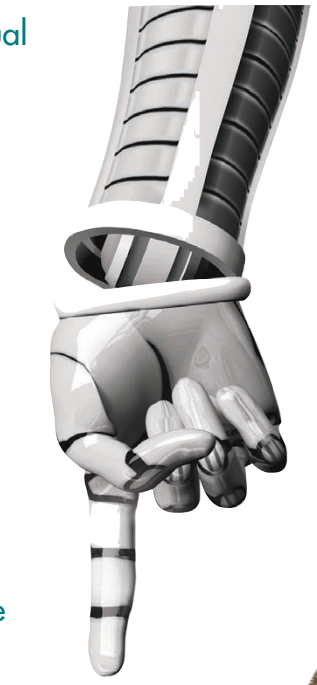
Nurtures an atmosphere of optimism and a positive belief in the future by:

1. Encouraging the belief that all youth can learn science or pursue science careers
2. Creating a science-friendly learning environment
3. Promoting science careers for all youth, regardless of their gender, race, or ethnicity
4. Demonstrating how science can improve the world

Values and Practices Service to Others

Encourages an ethic of caring and civic responsibility by:

1. Helping youth connect to the community through service projects
2. Encouraging empathy for others and responsibility to the community
3. Engaging youth in real world science activities that consider the needs of others
4. Understanding the positive and negative effects that science has on humans



4-H Science Core Competencies

Opportunities for Self-Determination

Encourages and supports independence in youth by:

1. Helping youth set their own goals
2. Encouraging youth to make their own decisions
3. Describing pathways to engage in science careers
4. Communicating the value of science for all

Opportunities for Mastery

Provides opportunities for youth to develop skills, competence, and expertise by:

1. Designing experiential, inquiry-based, opportunities for youth to learn 4-H Science skills
2. Challenging youth to explore new or different 4-H Science projects and areas of learning
3. Supporting youth in achieving their goals in the face of setbacks
4. Knowing how to foster an increasing development of skills in youth

Engagement in Learning

Encourages youth to direct and manage their own learning by:

1. Assisting youth in setting realistic goals of their own choice
2. Encouraging an inquiry approach to learning and exploration
3. Providing sufficient time and an appropriate environment for thorough learning

HANDOUT

Target Impact

Three program elements are necessary to achieve *Target Impact:*

- Research-based ***Content***
- Positive Youth Development: ***Context***
- Appropriate ***Dosage***

The Competency Self-Assessment

TIME:

25 minutes

MATERIALS:

Handout –
4-H Science Competencies Self-Assessment

PURPOSE:

To help youth development professionals:

- Become familiar with the 4-H Science Competencies and Tools
- Identify their own strengths and areas they want to improve
- Identify how these tools can be used in their own work

TRAINER NOTES:

STEP 1: Introduce the 4-H Science Self-Assessment Tool.

The 4-H Science Self-Assessment Tool breaks each competency down into specific indicators, providing context for what each one looks, acts, and/or sounds like. It is a way for people to determine their strengths and identify where they would like to enhance their learning and/or skill development. We realize there could be more competencies and a lot more indicators, but each one needed to be useable and not overwhelm staff and volunteers.

This self-assessment is not to be confused with a personnel tool. It is not intended to be used as a means for supervisors to score their staff. It is a learning tool designed to identify where there might be opportunities to develop a learning plan.

In the self-assessment tool you will find both youth development and general science competencies. The mastery section of the competencies is where you will find some of the strongest references to science, mainly how to lead an inquiry approach.

The tool is designed to consider the broader youth development and science competencies but not the specifics for each content area. For example, if you are working on robotics or environmental issues, you may need to add specific competencies that cover these particular topics.

This tool is about self-improvement and having people consider a plan for making such improvements. This does not mean it could not be applied across the system, simply that it's not designed to be an evaluation tool as much as one for identifying new opportunities for improvement.

STEP 2: Administer the assessment.

Have each participant take the self-assessment. Let them know they have about 10 minutes to complete the questionnaire and tally their answers.

STEP 3: Work in groups.

Once they are done, ask them to choose a partner and work in a group of two or three to discuss an area where they saw their greatest strength and one area they would like to improve. Give them a few minutes to have this discussion.

STEP 4: Reflect on the groups' findings.

As a group, discuss the following questions.

- *Where did you find you are the most skilled?*
- *Where are the areas in which you want to work further?*
- *Think back to the earlier exercise in which you stood by the competency you felt was your strongest. After taking this self-assessment, would you still stand in the same place?*
- *How might you use this self-assessment in your own work?*

STEP 5: Transition to Activity #4.

Whether it is staff or volunteers you are observing, what might you want to think about when you use this tool? Let's look at another tool that you can use for observation.

HANDOUT

4-H Science Competency Self-Assessment

The self-assessment tool can be used by volunteers and staff—facilitators, peers, mentors, and coaches—to provide examples of what 4-H Science Competencies look like to assess the level to which a 4-H Science Facilitator has developed the competencies needed to effectively implement 4-H Science. It can also be used as a training outline to assist trainers in determining the components needed in a 4-H Science training. Assessment tools are designed to be coaching tools, not performance reviews, so that individual facilitator's competencies can be gauged and plans made to ensure progress toward knowledge and skills development.

Adapt, adapt, adapt—this tool is flexible. Use all or parts of this tool when relevant to your work. Some 4-H providers may choose to shorten this tool to make it more practical for a quick assessment for a short-term employee (also see short observation cards). You may decide to identify 3–4 areas that you want to strengthen the most.

4-H Science Competency Self-Assessment

Please fill in the circle that tells how much you currently are capable of using the knowledge and skills in these of these areas when you work with youth in 4-H Science programs.

	0 Never	1 Sometimes	2 Usually	3 Most of the Time	4 Always
Caring Adult					
I use language of respect	○	○	○	○	○
I listen to youth in a non-judgmental way	○	○	○	○	○
I demonstrate shared leadership though youth-adult partnerships	○	○	○	○	○
I encourage youth to think about what they are learning	○	○	○	○	○
I make verbal contact with all youth	○	○	○	○	○
I encourage learners when they experience setbacks	○	○	○	○	○
I offer praise and encouragement when youth take initiative and leadership	○	○	○	○	○
I identify, build on, and celebrate the potential of all youth	○	○	○	○	○
I respect youth of different talents, abilities, sexual orientations, and faiths	○	○	○	○	○
Inclusive Environment (Belonging)					
I help youth feel welcome and part of a group	○	○	○	○	○
I establish a climate of fairness and openness	○	○	○	○	○
I respond positively to the ranges of youth's feelings	○	○	○	○	○
I cultivate a sense of togetherness among youth	○	○	○	○	○
I value and act upon the ideas of others	○	○	○	○	○
I serve as a role model for inclusion and tolerance	○	○	○	○	○
I initiate, sustain, and nurture group interactions and relationships	○	○	○	○	○

4-H Science Competency Self-Assessment	0 Never	1 Sometimes	2 Usually	3 Most of the Time	4 Always
Safe Environment					
I conduct myself in a calm manner	○	○	○	○	○
I reduce or eliminate physical and environmental hazards	○	○	○	○	○
I re-emphasize ground rules related to conduct	○	○	○	○	○
I intervene when safety demands it	○	○	○	○	○
See Oneself in the Future (Sense of Hope)					
I project an optimistic, positive manner	○	○	○	○	○
I reinforce the idea that all youth can succeed	○	○	○	○	○
I offer positive encouragement and support even in the face of setbacks	○	○	○	○	○
I talk about the future and youth's role in it	○	○	○	○	○
Values and Practices Service to Others					
I encourage youth to contribute to the communities in which they live	○	○	○	○	○
I voice support for giving back to the community through service	○	○	○	○	○
I believe in science's role in improving communities	○	○	○	○	○
I provide opportunities for youth to link their experiences to citizenship	○	○	○	○	○
I identify opportunities for youth to become civically engaged	○	○	○	○	○
Opportunities for Self-Determination					
I provide experiences that encourage youth to share evidence	○	○	○	○	○
I identify opportunities for youth to compare claims with each other	○	○	○	○	○
I articulate strategies for data collection and analysis	○	○	○	○	○
I work with youth to identify sources of information	○	○	○	○	○
I actively consult, involve, and encourage youth to contribute to others	○	○	○	○	○
I provide opportunities for youth to determine program expectations and direction	○	○	○	○	○

4-H Science Competency Self-Assessment	0 Never	1 Sometimes	2 Usually	3 Most of the Time	4 Always
Engagement in Learning					
I guide youth in learning for themselves	○	○	○	○	○
I create opportunities for problem-solving via discussion, debate, and negotiation	○	○	○	○	○
I worth with youth to establish appropriate goals for their age	○	○	○	○	○
I provide opportunities for youth to link their experiences to the real world	○	○	○	○	○
I use a variety of questioning and motivational approaches	○	○	○	○	○
I use multiple learning approaches to meet learner's needs	○	○	○	○	○
Opportunities for Mastery					
I suggest challenges that can be explored by direct investigation	○	○	○	○	○
I encourage youth to make predictions	○	○	○	○	○
I assist youth in developing hypotheses related to their investigations	○	○	○	○	○
I allow youth to conduct formal and open-ended tests and experiments	○	○	○	○	○
I have youth discuss their findings with each other and evaluate evidence critically	○	○	○	○	○
I encourage youth to share their knowledge by teaching others and leading new activities	○	○	○	○	○
I help youth see setbacks as opportunities for new explorations	○	○	○	○	○
I support youth to set new goals, and try new ideas and approaches	○	○	○	○	○
I provide opportunity for youth to use appropriate technology	○	○	○	○	○

The 4-H Science Competency Cards

PURPOSE:

To help youth development professionals:

- Become familiar with the 4-H Science Competencies
- Identify how these tools can be used in their own work

TIME:

30 minutes

MATERIALS:

Handout –
4-H Science Competency Cards

Prepare the cards in advance so everyone has one complete set of all eight competencies.

TRAINER NOTES:

There are at least two different potential ways you can use these cards. One is by having the participants observe with videos and the other is by actually observing a facilitator with youth in a fishbowl approach—participants observe the facilitator.

STEP 1: Explain the cards.

The cards you have before you are the third and final competency tool. They are a quick and easy way to choose a key indicator that you want to concentrate on as the facilitator. They are very similar to the self-assessment tool, but made short and simple and more portable. They are intended to be used one at a time, as needed to complement your work.

If I were working on my own improvement, I might ask a peer to observe me or I might even just carry one card with me and work on just one of the bullets or indicators. You might use them when working with volunteers to frame the coaching/training you wish to provide.

We are going to use them today with a short video of a facilitator leading a science activity. These are not meant to be judgmental, but for us to consider in reflection and use to improve our practice.

***Divide the participants so that a few people are responsible for each competency, if possible at least 2 people for each of the eight* Essential Elements.**

Reminder, if you are using the fishbowl (see Step 2) and watching an actual facilitator with youth, you would want to introduce this a little differently.

I am going to show a short video twice. The first time, I want you to just see what is happening, what you are hearing, etc. The second time, I want you to observe it in terms of the competency card you have.

Do you see any of these competencies? If so, what do you see?

Before starting the video, make sure that each competency or fishbowl is being covered by a couple of participants.

Note: if you are doing a fishbowl observation with real facilitators and youth, you may want to just do it once.

STEP 2: Watch the video.

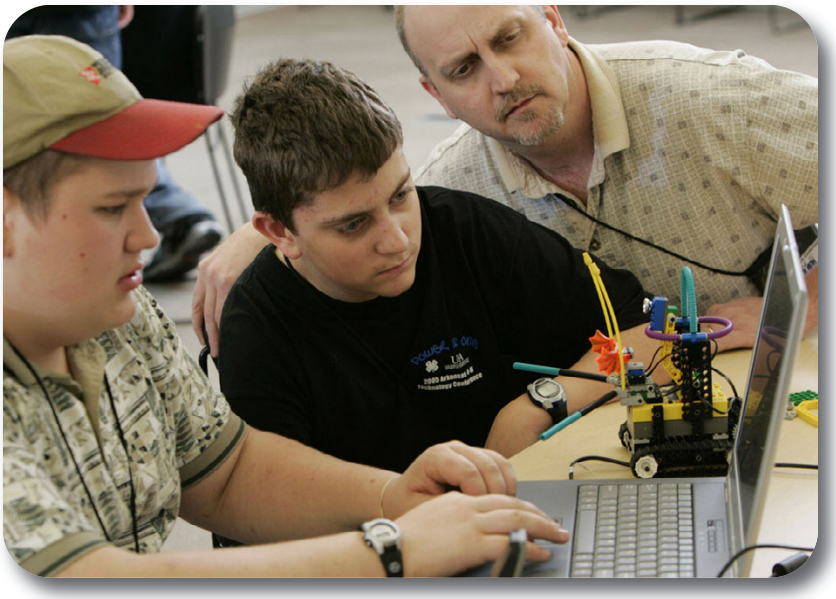
Choose one of two options, depending on time:

1. VIDEO: Show a video (ideally between 3–5 minutes) where they can observe a facilitator working on 4-H Science with young people (for example, girls building a car). Participants are to see if they observe their competency element.

2. FISHBOWL: Fishbowl refers to the participants watching an actual facilitator conduct a very short 4-H Science Activity. Invite someone (for example, staff or volunteers in your area who are working with the 4-H Science program) to conduct a short activity. Confirm this person is comfortable with being observed and critiqued. This presents an opportunity for the presenter to demonstrate their activity and get feedback, and the participants to practice looking for the competencies.

STEP 3: Reflect on the group's observations.

- *What did you observe in this video/activity?*
- *How easy or difficult is it to observe these behaviors?*
- *How can we use all of the tools covered in this training help facilitators improve their delivery?*



STEP 4: Transition to Activity #5.

As you have seen throughout this training, we know that the 4-H Science Competencies support both context—youth development and science. This provides a critical piece of what we mean when we say 4-H Science.

Over the last 2.5 hours, we have covered three competency tools: the overview of the eight competencies; the self-assessment and the cards —each one featuring an activity that can be used to introduce the tool to your own staff or to familiarize yourself with how you might use it in your work.

HANDOUT 4-H Science Competency Cards

4-H Science
Core Competency

Caring Adult

1. I use language of respect.
2. I demonstrate shared leadership though youth-adult partnerships.
3. I encourage youth to think about what they are learning.
4. I encourage learners when they experience setbacks.
5. I offer praise and encouragement when youth take initiative and leadership.

4-H Science
Core Competency

Inclusive Environment (Belonging)

1. I help youth feel welcome and part of a group.
2. I establish a climate of fairness and openness.
3. I cultivate a sense of togetherness among youth.
4. I serve as a role model for inclusion and tolerance.
5. I initiate, sustain, and nurture group interactions and relationships.

4-H Science
Core Competency

Safe Environment

1. I conduct myself in a calm manner.
2. I reduce or eliminate physical and environmental hazards.
3. I re-emphasize ground rules related to conduct.
4. I intervene when safety demands it.

4-H Science
Core Competency

See Oneself in the Future (Sense of Hope)

1. I project an optimistic, positive manner.
2. I reinforce the idea that all youth can succeed.
3. I offer positive encouragement and support even in the face of setbacks.
4. I talk about the future and youth's role in it.

4-H Science Competency Cards

4-H Science
Core Competency

Values and Practices Service to Others

1. I encourage youth to contribute to the communities in which they live.
2. I voice support for giving back to the community through service.
3. I believe in science's role in improving communities.
4. I provide opportunities for youth to link their experiences to citizenship.
5. I identify opportunities for youth to become civically engaged.

4-H Science
Core Competency

Opportunities for Self-Determination

1. I provide experiences that encourage youth to share evidence.
2. I identify opportunities for youth to compare claims with each other.
3. I articulate strategies for data collection and analysis.
4. I work with youth to identify sources of information.
5. I provide opportunities for youth to determine program expectations and direction.

4-H Science
Core Competency

Engagement in Learning

1. I create opportunities for problem-solving via discussion, debate, and negotiation.
2. I work with youth to establish appropriate goals for their age.
3. I provide opportunities for youth to link their experiences to the real world.
4. I use a variety of questioning and motivational approaches.
5. I use multiple learning approaches to meet learner's needs.

4-H Science
Core Competency

Opportunities for Mastery

1. I suggest challenges that can be explored by direct investigation.
2. I encourage youth to make predictions.
3. I allow youth to conduct formal and open-ended tests and experiments.
4. I have youth discuss their findings with each other and evaluate evidence critically.
5. I encourage youth to share their knowledge by teaching others and leading new activities.
6. I provide opportunity for youth to use appropriate technology.

Conclusion

TIME:

15 minutes

MATERIALS:

- Index cards at each place
- Flipchart with each of the evaluation questions posted

PURPOSE:

- To summarize and help youth development professionals identify how these tools can be used in their work
- To identify ways to improve the training session

TRAINER NOTES:

STEP 1: Close the session.

Before we close, does anyone have a question or reflection on the session they would like to share with us?

It is important in any learning opportunity to check in on what worked, what didn't, what could be done better and whether participants learned anything from the experience.

STEP 2: Conduct the evaluation.

To assist us in our work, could you please use the card at your table and answer these three questions? (Post questions on flipchart.)

- *Give the workshop a rating of 1 to 5 (5 being the best).*
- *What is your personal take-away message from this workshop?*
- *How will you apply these tools and information in your local program?*
- *Check in and get some feedback on how they plan to use these tools.*

STEP 3: Final words

Thanks so much for your time. We appreciate your participation and giving us the chance to learn more about your expertise—and also more about you as a caring adult. Good luck in supporting your team of 4-H staff and volunteers and growing your own practice in 4-H Science.