



Early Learning: Kitchen Chemistry

Syllabus

As Ruff tries his best to make his culinary creations come to life, he runs into a few problems along the way. He is excited to discover that by investigating solids and liquids and exploring heating and cooling, he can use science to become a better cook. But will that be enough to make Ruff king of the cook-off?

Contact Hours: 1

OCCRA Credit:

To earn OCCRA credit for this course, you must submit the Learning Artifact. Each Learning Artifact includes a designated space for your OPIN number.

Course Learning Objective:

Learners will integrate Ruff Ruffman videos to talk about science by making observations, sharing ideas, and participating in group discussions. Observations and making predictions are important science practices.

Demonstration of Learning:

For the learning artifact, watch the Ruff Ruffman videos with young learners, and use the discussion prompts provided in the course to engage in science talk to reflect on learning artifact survey document.

Course Structure:

This course consists of three parts.

1. Watch - Participate in a live session or watch the recorded session to learn about the skills you will need to complete the course.
2. Learn by Doing - Complete this activity to practice the skill(s) presented.
3. Learning Artifact - an activity to apply knowledge or reflect on practice in your setting required for course credit.



Learning Artifact/Demonstration of Learning: Participants will complete the Learning Artifact Document by identifying Learning Topic, Resources, and short description of learning activity.

Skills Checklist

Build Scientific Concepts


- ☐ Different kinds of matter can be solid or liquid depending on temperature.
- ☐ Heating or cooling a substance may cause changes that can be observed.
- ☐ Sometimes changes are reversible and sometimes they are not.
- ☐ Solids and liquids behave differently. For example, liquids take the shape of their container while solids don't.

Developing Scientific Understanding

Children may have had other experiences with changes in matter and may have ideas about the reasons for the changes. Some questions you might encounter as they work to reconcile their thinking include:

- ☐ If you blend a solid food, is it still a solid?
- ☐ Can matter change from liquid to solid and back again?
- ☐ Can you separate something after you have mixed it?
- ☐ If you make food cold, does that un-cook it?

Resources:

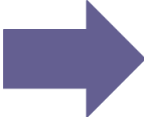
- ☐ Teaching Guide  [ruffruffman-doc-kitchentg.pdf](#)
- ☐ Ready to Learn Collection for Ruff Ruffman Show [Website Link](#)
- ☐ PBS Learning Media: Ruff Ruffman Show [Videos](#)
- ☐ Ruff Ruffman Activity Cards [Link](#)
- ☐ Rainbow Popsicle Activity [Link](#)
- ☐ Chocolate Mug Cake Activity [Link](#)
- ☐ Ruff Ruffman Cookie Creator Interactive Game [Link](#)
- ☐ Ruff Ruffman Cookie Cookbook [Link](#)
- ☐ Ruff Ruffman Cookie Cookbook Folding Directions [Link](#)
- ☐ Presentation [Link](#)

Learning Artifact Google Doc:

- ☐  Early Learning: Kitchen Chemistry



OCCRA Standard:

F. Learning Environments & Experiences	Core Knowledge and Competencies			
	KNOWLEDGE BASE Learning Experiences			
	KNOWLEDGE CONCEPTS	LEVEL 1	LEVEL 2	LEVEL 3
	The principles of integrating curriculum across all developmental domains including how to embed learning in everyday routines and activities.	Describes ways to develop and implement a daily schedule and routine that are appropriate for all children's learning and development. Describes ways to choose a curriculum that includes all domains in Ohio's Early Learning and Development Standards and includes knowledge of individual children and their interests.	Implements and adjusts daily schedules and routine to ensure they are appropriate for all children's learning and development. Plans and implements curriculum and instructional practices based on knowledge of individual children's needs, interests and abilities as determined by assessment information.	Implements strategies to support the children's role in planning curriculum based on the interests, skill levels and potential of each child. Articulates, analyzes, evaluates, and applies current theory and research on design of curriculum in order to support individual and group growth.
	The value of play and concrete experiences that are tied to familiar aspects of a child's world.	Recognizes that learning occurs through play and supports and encourages children's participation in a variety of activities.	Incorporates active play in all activities and routines throughout the day and emphasizes the process of creating instead of the end product. Encourages parent input in planning and participating in activities and uses child's home language in daily activities.	Identifies and communicates the skills fostered through play to other adults, including parents. Evaluates the learning environment, <i>teaching strategies</i> and materials to support the learning potential found in play for all children.
	The strategies that support language development and early literacy throughout early childhood.	Lists ways to engage children in activities that support language development and early literacy.	Creates an environment and learning experiences that foster language development and early literacy.	Evaluates the environment and learning experiences that foster a culture of language development and early literacy.
	The strategies that create a rich environment that fosters curiosity, thinking and problem-solving.	Supports and encourages children's participation in a variety of learning experiences that foster curiosity, thinking and problem-solving.	Integrates various opportunities into the learning environment that support curiosity, thinking and problem-solving for children.	Evaluates the strategies that create an intellectually engaging environment that fosters curiosity, thinking and problem-solving.

Standards:

Ohio Educator Standards

- 4 Teachers plan and deliver effective instruction that advances the learning of each individual student.
- 5 Teachers create learning environments that promote high levels of learning and achievement for all students

ISTE Educator Standards

- 2.1. Learner Teachers continually improve their practice by learning from and with others and exploring proven and promising practices that leverage technology to improve student learning. Teachers:



2.1.b. Pursue professional interests by creating and actively participating in local and global learning networks.

2.1.c. Stay current with research that supports improved student learning outcomes, including findings from the learning sciences.

2.5. Designer Teachers

design authentic, learner-driven activities and environments that recognize and accommodate learner variability. Teachers:

2.5.a. Use technology to create, adapt and personalize learning experiences that foster independent learning and accommodate learner differences and needs.

2.5.b. Design authentic learning activities that align with content area standards and use digital tools and resources to maximize active, deep learning.

2.5.c. Explore and apply instructional design principles to create innovative digital learning environments that engage and support learning

