Erikson Institute

Technology in Early Childhood Center

Link to this checklist: http://bit.ly/TECSTEMPlan
Refer to TEC Center's blog post for tech integrated play and lesson planning ideas: bit.ly/TECQPlan
Padlet for STEM Lab resources and more ideas: http://bit.ly/TECSTEM
Technology as defined in the Early STEM Matters Report: http://bit.ly/STEMatters

Getting Started w/STEM (S/E/M+T) Integrated Play and Lesson Planning

Your Name:Colleen Cunningham

Play or Lesson Plan Title: Exploring Nature with Tech Tools

Class or Grade you teach: Prek

City and State: St. Raymond School

Name of School: St. Raymond

District Name or #:

How many years have you been teaching?25

How long have you been using tech w/children? 4

Play or Lesson Focus: **What question(s) do you want to help children investigate?** **Science and Technology**	❑ science ❑ Technology or Media Literacy (how to use tech or make tech) ❑ Engineering ❑ Math
Play or Lesson Objective ○ **Is this really one play or lesson plan?** ○ Or does it need to be divided into several different plans with their own objectives?	Students will explore natural materials collected from outside and describe what they observe.
Standards your plan meets (STE, NSGG, Advanced Ed STEM Certification) **NOT NECESSARY BUT FOR SOME PROGRAMS IT IS IMPORTANT TO LIST WHAT STANDARDS YOU ARE MEETING**	
How will you help document children's wonder and curiosity?	Take pictures of students as they explore and write down what they observed.

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What questions will you ask to help them go deeper in their investigation?	I can ask questions to help students make observations - such as what does the item look like? What colors do you notice? What does this item look under the microscope? What shapes do you see?
What STEM vocabulary and terminology do you need to introduce?	Document camera-tool that helps us to see something very close up
What language/vocabulary might be helpful for children as they describe their processes for play/work/learning? **Will children need to be introduced to any new vocabulary or terms?** ❏ If so, when and how should you introduce these new words?	
Where and when will the learning and playing experience occur? ❏ Inside or outside? ❏ Will children design the space with you?	Both inside and outside
How much facilitation do you want to have in your play and learning experience? ❏ Does the facilitation need to be with an adult? ❏ Does the facilitation need be with a more experienced peer? ❏ Does the facilitation need to be with an older child?	The facilitator needs to be an adult. Preschool students need someone who can scaffold and support them in different ways based on their own skills.
How much of your time will be technology how-to focused and how much will be play or hands-on focused? ❏ What materials do you need to prep or have nearby? ❏ What new vocabulary has to be introduced? ❏ What materials can the children create or make with tech tools, loose parts or art materials? ❏ What type of sensory experience are you creating?	Most of the time with technology will be hands-on focused. Students will use t document camera. If students need support in using it, teacher will then offer how-to focused instruction.

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What materials do I need? **Examples include:**	**List or post pics of your materials here**
❑ tech tools ❑ Tablets i.e iPads, Fire, etc. ❑ apps ❑ Robot or tangible tech ❑ laptop ❑ desktop computer ❑ Software ❑ website ❑ document camera ❑ projector ❑ microscope ❑ flashlight/headlamp/solar lantern ❑ Circuits ❑ Do You Have Flow? Idea book ❑ ProTips ❑ 10 mm LEDs are best for small hands ❑ 3M Copper Tape is worth the $$ it just works better as tested by Museum of Science & Industry ❑ Don't forget batteries ❑ robotics ❑ other tangible tech ❑ tablet stand or tripod? ❑ green screen materials? ❑ writing and notetaking? ❑ do students need to draw or take notes on paper?	- **Desktop or laptop computer** - **Document camera** - **Natural items found outside (sticks, leaves, grass, etc)** - **Pencil and paper (for teacher to take notes)**

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❏ markers, pens, pencil, tablet styluses? ❏ whiteboards? ❏ pretend play materials? ❏ engineering materials? ❏ Ramps and/or blocks? ❏ good junk/loose parts? ❏ pulleys? ❏ measuring tools? ❏ rulers, measuring tape, yarn, tape, blocks? ❏ natural materials? ❏ found objects from nature? ❏ literacy materials? ❏ books or mentor texts, including digital mentor texts i.e. podcasts, blog posts, ebooks, digital photography? ❏ are the materials you are using culturally appropriate? ❏ do the images reflect the diversity of the children you work with? what about gender and stereotypes? Do you need to make culturally appropriate materials? ❏ are they available in several languages for dual-language learners? And do the images match the words? i.e.: if it says el gato is there a picture of a cat not ice cream?	
What previous experience do children have with technology tools? ❏ What are their digital skills? ❏ Are they in exploring stage i.e. learning the functions and how they respond?	The children are exploring the camera on the IPad.

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❏ Are they in early integration stage i.e. documentation? Have they mastered the tool yet? ❏ Are they able to innovate yet? i.e. create and make or fully integrate into pretend play?	
What hardware and software do you currently have access to in your classroom i.e. what tech are you using? ❏ What parts of the hardware and/or software do you anticipate causing your students trouble? ❏ What needs to be charged or updated before you use your tech tools with students?	
How much time do Qyou think you'll need to introduce the students to the technology tool(s) and any other materials? ❏ Will children learn how to use the tool(s) through open exploration time or through guided practice/facilitation? ❏ What parts of the hardware and/or software do you anticipate causing your students trouble? ❏ What new tech terms do you need to introduce?	
How much time do you think you'll need to introduce the students to the concept you want them to learn? ❏ In what contexts (whole group, small group, individually) might you need to roll out specific parts of your plan?	Students will be in a large group. We will review the changes that happen during the Fall to the environment outside. The teacher will explain that we are going to collect different materials and students will be making observations about what we collect.
Are there any students who may need additional supports, instructions, etc.? ❏ How can you meet these children where they're at?	Depending on the child, the teacher will provide support (such as small instructional tips and asking questions) that is in connection to the needs of each individual student.

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❑ Can the technology (hardware or software) be manipulated or adapted in any way to meet these needs?	
How can you use cooperative grouping/roles to manage the activities? ❑ Do I need a helper if I am working with another group of children? ❑ Do I need visual supports or a QR code that can take children to a tutorial?	Students can be working in partners. Partners can be set up so that students who are more practiced in making observations can work with those who are not as observant. Teacher can help facilitate conversation between them.
Will there be a parent engagement or parent education piece?	Parents will be notified of the lesson using Seesaw!
How will I document my students work or how will my students? How will we reflect on our work?	Pictures will be shared on Seesaw. Teacher will also write down some observations and share with the whole group. Teacher can also show some of the pictures that students take with the microscope and have them describe the photo to the class.

Describe your play or lesson plan activity so another teacher can understand what you did:
Additional Planning notes, description of play or lesson plan, pictures, links to helpful resources:

1. **Teacher and students engage in a discussion about the weather outside as it pertains to the time of year. Ex: "Now that it is Fall, what are some of the things that we are noticing outside?" Allow children to share what they see. End the discussion by telling students that we are going to take a closer look at some of the natural items that we might find outside. Make a list of what students will be collecting (depends on season)**
2. **Take students outside to collect natural items.**
3. **Bring materials back inside. In a large group, tell students that we are going to practice making observations. Review how to make a good observation: describing what we see, feel, smell. Noticing colors and shapes. Making connections. Teacher will also show the**

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Zoomy microscope and tell students that they will get a chance to use a new tool to help them make observations. The microscope is a tool that helps us to see small things close up.

4. **In small groups, students sit with the materials and discuss what they see and the observations they have made. Teacher can facilitate discussion if necessary by asking questions. After students have 5-7 minutes to explore and make some observations, teacher can introduce the microscope if students seem interested. Teacher can briefly show students how to hold the microscope and show them how the image of what they are looking at shows up on the computer screen. Students can take turns exploring the materials with the microscope.**
5. **After all students have had a chance to explore the materials, collect students is a whole group and discuss their findings. Teacher can also share photos that students took with the microscope.**