

“Little STEAMers (Focus Activity #2: Sorting”
By Cassandra Armstrong and Lindsey Herlihy

Video Transcript:

Okay, well it's 7:00 so we're going to go ahead and get started. This is our Little Steamers Focus Activity Number Two and it's going to be all about sorting.

Okay so I'm Cassandra. Last time, you heard from Lindsey. Next time you'll hear from Lindsey and this time you are getting me. We are both curriculum writers and professional development specialist at IMSA. And we were two of the authors of all of the Little Steamers activities.

A couple housekeeping things just like last time. I muted everyone. You can unmute yourself if you want to say anything. You can have your video on or off. It doesn't matter. This is being recorded.

We are going to upload it into the Moodle for little Steamers teachers and if there's any nine little Steamers features on here, it will be on our IMSA Digital Commons.

If you have any comments or questions throughout type in the chat bot.

Lindsay will be monitoring that and again feel free to type them in

if you have any questions at all.

So the objectives for the webinar tonight. We're going to identify the progression of how infants, toddlers, and young children begin to make sense of their world.

Describe how sorting in early childhood lays the foundation for later success in math and science. Identify a few simple ways to incorporate sorting exercises into the early childhood classroom. And we'll explore several activities that incorporate sorting

with kindergarten readiness mathematics and STEAM

learning.

So...

to get started...

I want to do a little activity for everyone, "What would you do?" and again chat box or just unmute yourself and speak out.

This is not a trick question.

If you walked in...

to my living room and saw this on the floor what was what was your first instinct? What do you want to do here?

Put them in pairs.

Okay pair them up.

Okay so.

I'm seeing in the chat: match them, pair them, I heard put them in pairs, give them mates.

Clean the living room. Yes, that definitely needs to happen.

But yeah. So like I said, this was not a this was not a trick question. That is like...

functional dolls even lot of children if you walk in and see a bunch of socks,

you're going to want to give them pairs.

So.

Next it's it's gets a little trickier. Okay so.

My goodness why is it.

Like every time I. There we go.

So yeah. You're going to match or like you said, pair, give them a mate. And whatever word you choose, that's the first thing that we did.

So...

hopefully that's kind of like a "no-brainer", like I said. Definitely not a trick question So...

I did that. I went through and I matched all my socks.

But...

I maybe this is just like a weird OCD quirk of my mine or something, but when I match my socks, I do not just them throw them into my stock drawer.

So if you're maybe weird like me? Take another like 30 seconds. Shout-out, type in the chat. What would you do next?

If you're crazy like me and you're not going to just throw him right in the sock drawer.

Okay.

Pair them by length. Long socks vs. short socks.

Sort sports socks and dress socks. Ankle socks and long socks.

Warm weather, cold weather.

Yes, oh my gosh. Color.

Attachment throw them in.

Whichsocks belong to who? Yes I love that.

There is...

one little tiny pair of baby socks because my house I have a 9 month old and my house is overrun with baby socks.

Perfect. That is awesome. Those were all right answers. That's what I love about sorting. There's like so many right answers.

So...

So yeah. You're going to sort them. You're going to categorize them. You're going to classify them. Whatever word you pick, that's what all of those options you just gave were. It was a way to sort, categorize, or classify.

So...

I did one of those.

I think this one was suggested by a few people. I organized them by length.

Okay, the longest stocks down to the shortest socks

This was not

terribly scientific. I didn't get out and measure them. I just kind of eyeballed it, but that's okay.

So, one more kind of question. This one this one's tricky because...

I don't know. This one's a little tricky.

But I have I sorted them in two different ways and I think some of these were even mentioned what when you guys said before.

So...

Take a look at the picture on the left. Was one method of sorting and the picture on the right is another method of sorting that I did.

So...

Does anyone have any guesses or I mean in either picture can you maybe spot some categories?

Light vs. Dark socks. Patterns.

Length.

Patterns. Who owns them.

Stripes, pictures, solids.

Yes.

Perfect. S...o.

to just explain the method to my madness.

Get rid of the chat. What my thoughts were on the picture on the left, I had some athletic socvks.

Some

dress socks.

No-show socks.

and

My warm weather socks.

And this is probably how I would actually sort my socks drawer.

Little personal information.

This one over here I did stripes.

Holiday patterns. It's hard to tell, but that one is snowflakes.

One solid color.

These are kind of like a marble.

Like a fact. Like blue and white and maroon and white. And then these had the heel

patch, but no stripes.

So I mean looking at these.

You could, like you guys said, there's so many ways to sort socks.

So that kind of leads me to "How do we organize?"

And, like I said, I have a 9 month old. And I kind of told myself I wasn't going to read any parenting books. And then I actually think it might have been Lindsey who suggested the "Wonder Weeks" book to me. And I bought it when my baby was like 2 weeks old because he slept

all the time and I was like all those you know I want to know more about his development and I was a science teacher. I was a high school science teacher.

I like that's just really

the kind of thing that's interesting to me.

And

the "Wonder Weeks" concept if you're not familiar with it, it's basically all..

all kids go through these developmental leaps.

These mental leaps. Obviously, they are growing constantly but there is like big mental leaps that they go through where all of a sudden their brain developmentally can like handle something new.

And I I wrote them down so I'm going to...

tell you the first one is senses. So when they're in this is when they're like 5 weeks old they like kind of start to sense things. They're

can start to see better. They kind of put together

like touch and understand what that is. Things like that. The second one is patterns. And that's things, you know, like eating, sleeping, like really basic patterns.

The next one is transition.

Then event. Then

relationship.

Then categories. And so that's the one that my son is in. 9 to 10 month old is in right now is categories and so

you know we're just we...

try to like play. When he's playing with his toys we just try to tell him what they are. Like these are cars or these are you know, your stuff toys, and these your books.

Then it goes sequences, programs, principles, and systems. But...

patterns is in there. Categories is in there. So these are things that you don't before children or even one-year-old, they can do.

So what we just kind of did with the stocks was the first thing we did was we talked about matching.

So...

when you see things that are in pairs, you want to match them. That is the simplest way to organize.

Then, if there's more than just matching or if they're your starting something that isn't paired, you can sort it.

And then the next step is to categorize or classify. Now...

a lot of times these words are used...

interchangeably. If we go back a couple slides, I use them interchangeably. We matched, then we sorted / categorized / classified.

Again, in the chat, are there any ideas as to what the difference between

category or sort and categorize or classify might be?

Or if you want to just shout out your thoughts.

Okay. So...

Classify might be a subset of sorting.

Or each step builds off the one before. So like you kind of match. Then you can store it and once you store it then you can classify or categorize. Yeah.

Good.

So this next...

Here are some examples of sorting versus classified.

What is the difference? What's the big difference here?

So, in the sorting column, I have "find the blue crayons", "separate the dirty laundry by color", "order the socks from shortest to longest" and "pick out the square beads".

In classifying, I have "put away groceries", "organize the art supplies", "sort the laundry" and "place the cards in the piles".

Okay yeah, so Joey says putting things in specific places based on attributes for classifying but with sorting your given be like you're good at getting things based on a given attribute.

Patricia says classifying is more general.

So yeah. Like sorting is kind of more of a direction.

Sort these by color.

Like separate the dirty laundry by color. But that's not the only way you can sort the dirty laundry. Right? You could pull out all the shirts and all of the pants and all of the socks and underwear and all the towels.

So there's lots of different ways you could sort laundry. But, because...

colors bleed and all of that. We just usually sort laundry by color.

Whereas classifying as is...

I guess I like to think of it as like more personal.

Yeah classifying is sorting and giving category. Perfect.

So and this was actually this difference between sorting and classifying in this...

kind of...

thought process is Piaget. It was Piaget who kind of came up because sorting and classifying I mean I still...

would probably use them interchangeably even throughout this presentation you might see where I might have used the word sorting when I meant classifying or one way or the other. It's tricky. I don't think this is a distinction you would have to make with your preschooler's like okay we're going to store it needs crayons what you're going to classify these rocks.

Or anything like that.

But I do think it's really interesting to know that Piaget figured out that

there is this difference on a developmental level.

so... just like last time.

Why should my students be doing that? So why is sorting important? It's the beginning of the development of pattern recognition. Very important.

Be understanding of categories and characteristics.

This is hugely important in especially science. Again I'm a science teacher, so I love to plug the science, and we'll talk about that in a little bit too, but...

it's just so important for students to be able to make observations about size,

color, weight. All of those kinds of things.

Building a foundation for algebraic thinking.

And the development of strong observational skills.

So...

this was I thought really...

interesting. In this was from an article. You can see the all the all those articles are tagged at the bottom of each side of the source articles.

And this one was really important because it

followed a group of students

who kind of kind of had strong sorting skills and who lacked sorting skills. And the students with strong

sorting skills were able to make those matches. They were able to identify sets. Which...

kind of like...

reverse sorting or reverse categorizing.

They can classify items by attribute. They can recognize and create patterns and all of, you know, all of those

things in that left column are so important to the foundational skills of math and science. And you know, those things they know.

The students with the lack of sorting skills...

it...

resulted in possible struggle. Not, you know, a definite struggle or anything, but a possible struggle in connecting knowledge. And we know that is a huge thing throughout Pre-K past high school into college those connections. That's such a huge point.

Important point in education is making connections between, you know, math and science and understanding that it's not two siloed things.

And what is...

new and what is already known. You know building on each other especially math is so it builds on its own so much.

Making informed judgment,

making and enacting decisions, coping with events that are out of routine, and dealing with the unexpected.

These are really

like our executive functioning skills.

That...

having the strong foundation in matching, sorting, classifying helps with those skills...

later on.

Okay to look at math specifically...

We have our five disciplines of math: number sense, algebra, geometry, measurement, data analysis and probability.

Obviously all very important aspects we talked a lot about, you know, number sense last time with subitizing.

I want us to look at the definition for algebra.

The understanding of patterns and relationships including sorting and categorizing.

I mean that is algebra in one sentence and sorting and categorizing are like...

half of that sentence.

It really does build you know build upon that whole...

relationship part of patterns and relationships. You know, when it, when I think algebra, and I was not a math teacher,

but when I think algebra, you know, the first thing that comes to my mind is like linear equations, quadratic equations, the parabola, the lines, all of those things.

And that's all data. You know data that represents relationships.

And in order to get accurate data, you have to have that strong background in sorting and categorizing.

And then, like I mentioned before, this was, you know, my thing for science everything in science is based on classification, so just a couple examples.

The physical properties of materials is huge. I mean that the whole periodic table.

Is looks the way it is because all of those elements were sorted based on their characteristics.

Whether they are a metal or a nonmetal. Whether they are very reactive or not reactive.

All of those things.

And then other like students

even like in fifth,

fifth grade, I believe there's a NGSS standard about

Identifying properties. I'm sorry, identifying materials based on their properties.

Those are things like color, density, boiling and freezing points, what state of matter is it? Is it a solid, liquid or gas?

Does it dissolve in water? What is its pH? All of those things and you're going to have a really hard time understanding

how to get past that point if you don't have a strong background in sorting.

And then also the characteristics of living things. So this is like a kind of like a tree of life thing.

Every single branch in that image is a split in some sort of characteristic.

So we have our five kingdoms of life. Animals, plants,

fungi, protists, and bacteria.

And...

in all of those,

so like, I just, in the sub bullet there for animal...

you can sort animals in so many ways: number of legs, does it live in water?, does it fly?, does it eat meat? or maybe you know, not eat meat?, does it lay eggs?, does it give live birth?, all of these things.

And you know you might have heard before the Kingdom, Phylum,

Order, Family, Genus, Species.

I missed Class.

Anyway all of those are different forms of separation. So like...

humans, we are Homo Sapiens. That's our genus and our species. We are animals.

We are...

in...

in phylum chordata, which means that we have backbones, which is any other animal on Earth that has a backbone, we share that with that with them.

We are mammals.

Okay. We are in Hominadae, which means we have opposable thumbs. Like so, there are just all of these things. It's just breaks down further and further and further until you get to the human species.

So, all of these important aspects of sorting. How do you get started?

Just like with subitizing...

it's through play.

Although I am throwing in a couple guidelines,

if and when you can, any starting is good sorting, but if and when you can,

number one, the learner should be deciding which characteristic to sort by. And again, the right there I just used sorting

It would be better if they were categorizing or classifying instead of sorting.

Right? If they were making that choice.

The second one: children should physically sort the objects.

Instead of, you know, having pictures on cards for them to sort, if you could actually have the item... obviously that's not always possible, but anytime you can have an actual model for them to get their hands on is amazing.

And then three: assuming that the learner

came out with their own reasoning for the sorting They should be able to describe that reasoning back to you.

And I just thought those were really like simple good guidelines and I had to shout out because I found them from an article from Michigan State, which is my alma mater. Go green!

So I'm going to share a quick video.

About a...

preschooler's sorting some rocks.

[video clip] Those are all the same. I think none of them look exactly the same. Can you make some reason to put them in groups?

Cassandra: Can you guys hear it?

We can hear it. Oh you can? Okay.

[video clip] Line them all up. Is there any way we could make two groups that are different?

I use this one.

I didn't hear what you said I'm sorry This one... What about this one?

This don't use the same as the other one. So you think this one is different? [inaudible] Are these like each other?

No this is bigger. They are just totally different? They're different colors? That's true. They're just totally different? Is that the same color as one of the other rocks? Are any of the rocks the same color? No? Those are the same size? Can you find mor ethat are that size? Maybe we could make a group by their size?

So did this one go with that too? Are those the same size? Are there more that would go with that?

Those are kind of the same size? Okay so that makes a group with size? Do any of the others go? Those are the same size? Those are kind of in a group? What about any of these other ones? That maybe goes with that one? There? No.

So that means needs to be a different group? What about these three? Did they fit in one of the groups? They go by themselves? So this is by size and we have these different groups? [end of video]

Any observations or thoughts about that video before we move on?

I really just love how it's a conversation. How at first he is very unsure. He's like no there's they're all different. There's no way to sort them and then he, like...

she gives him time...

You know she doesn't suggest size, but then he just kind of realizes... well, this one's heavy and then oh well these two are the same size so...

And I really like

watching that whole sequence because he thought that he...

after a few minutes,

he was able to figure it out.

Kelly says "I loved her questions". Yeah. I like, she..

she did a great job of

not leading him to the answer, but still encouraging him to keep going.

Which, perseverance and this kind of stuff, you know, is another one of those executive functioning skills which is very

important.

Yeah. Giving given the opportunity to self select the categories and so there's actually if you go to the Erickson. edu. The Erikson Institute page. There's

I think like six different rock sorting videos. It was so hard to choose which one to include because there was another one where this little girl was so intent on classifying them by weight and she was so like seriously

like trying to wait ... with her hands and it was just amazing.

Yeah. Her patience. She was so patient with

I mean I think

to be a preschool teacher you need a lot of patience to begin with.

And so yeah, that was great, And she exactly she talked him through the process without telling him exactly what to do. And that is that is key because I feel like

sometimes teachers, or even I think especially parents, get so excited when their

child or student is doing something new that they. Now do this! Now do this! And without giving the answer is just

so important.

So...

I want to go through just a couple ideas to...

incorporate sorting into like some daily activities.

So...

If you have a sensory table or sensory bin... just to include some sort of sortable objects in there and without even telling students or or categorize if they're playing around with them, they might see, like, I'm going to put all the reds over here and all the blues over here, and it might just become a natural thing.

This one's super important: use math talk when discussing sortable objects.

We're in really not even just with starting with anything if you can use words like most, least,

more, fewer, same as, equal to.

You don't less than, just anything to get students kind of used to hearing those kind of words and the thing with sorting the object is it gives them a visual representation of it, which is really great.

A really good way to incorporate science and get into that, like, science classification thing, that I was talking about is a sort science item.

Rocks...

like in the video leaves, flowers...

anything that you find outside, animals, pictures of animals, things like that those are all good things.

Because most stuff in science is classified in some way.

And then literacy. So books about sorting,

the ability to discuss how many objects were sorted in different ways. So just having that verbal conversation.

And so...

Here's a couple books.

The first book, The "Where is my baby?" book is actually like an infant board book or like I don't know about infant, but toddler board book.

But I love it. It's

this cow was looking for her baby and she finds all these other animals on the farm and I just think it's a really good way to talk while is that?

Is that her baby? Well no, it's not her baby. How do you know? And they could sit maybe you know it doesn't have spots. It doesn't have horns. It doesn't have udders. It doesn't you know, why it how do you know? But just by looking, but that's not the cow's baby?

And I love it because I know that it connects really well to a first grade NGSS standards.

What you going to do? I often memorize, so I'm going to read.

Make observations to construct an evidence-based account that young plants and animals are like but not exactly like their parents.

So, I thought, like, that book is just such a good kind of early childhood segue into that standard.

Do you know which ones will grow?

Is, I mean, exactly what it looks like. It just has tons of items.

And it's just kind of like a conversation starter. Like is that going to grow? Is that going to grow? Well no clothes don't grow, but animals do and plants do and things like that. So again sorting based on living versus non-living.

And then start it with a cute story about Paki packrat and he has all of this stuff and he needs to

sort it out in some way and it is just a really cute story.

Go get some literacy connections and then some games and activities.

So there's the Erikson Institute where that video, the rock sorting video was from. They have a bunch of activities as well on sets and sorting.

And they have these five activities that go along with five different books. So the books are exactly the opposite. Five creatures. Is it red? Is it yellow? Is it blue? Opposite and a pair of socks.

And they're all...

I really like these activities because they kind of start focusing on matching which again was like the first thing we did with the socks. It's like the precursor to sorting.

They also come in Spanish. All five of those books and activities.

A mixed-up animal collage is really cute. That's what the picture is to the right. The first part of the activity is just... looking at different pictures of the animals and identifying tons of different animal characteristics.

You know try and cats have triangle no triangle shaped noses. Birds have feathers.

Tigers have stripes. All of these different characteristics.

And then...

the teacher will have this one's really fancy it in the last and I think it just said cut out different shapes and cardboard or things like that.

And then the...

learner can pick,

you know, some stuff from each kind of type. What kind of feet

is my animal going to have? In the so this one looks to me like it kind of has like bird legs or bird feet.

And then I see...

some feathers. But then I see like some leopard spots.

So they kind of get to pick which characteristics they want their animal to have.

Another thing that

is really great is to be sorted by different senses.

So, all of the things we've talked about and then visual characteristics.

Sorting by sounds when students kind of get the hang of sorting.

Is really really awesome and there's a couple...

jingle ball sorts is kind of like a Christmasy thing where they have to sort the different jingle sounds. And then initial sounds is kind of like a word like does it sound the same type activity.

You can also, you know, sort by smells. Does this smell good? Does this smell bad? I know I always just kind of made it a rule of thumb not to do anything with food in my classes just because you never know, but you could obviously you can start by taste.

Is it sweet? Is it sour? All of those. Is it salty? All of those things.

Some other, those last two bullets. Just

any activity that you do, like, for example, that rock activity from the video.

He ended up starting by size.

She could then another day.

or, you know, maybe in a month

come back, give him the same set of rocks, and say, last time you sorted these by size. Can you sort them another way?

Because...

I mean this is even something that happened with my high schoolers. It happens with adults, you learn something one way and you get, you, that's just how it is.

And there are so many different ways to sort. And it really helps with that flexibility, which is another executive function skill that's really

important is that adaptability and flexibility.

And then the last thing is how are they sorted? So, kind of like what I did at the beginning with the socks.

So instead of here's these sock. Sort them or categorize them.

Here are these stocks that are in groups.

What

are those groups?

So kind of like doing the backwards

effect there. So, throughout this whole presentation, everything with the blue links are...

clickable.

It'll be on the Moodle

two of those links to all those activities. The link to the video is if you just click the video, it'll take you there. I've also put them here.

The three books.

A few of the articles that I had used and then...

some of the organizations. These are the same organizations from subitizing.

Amanda said sorting by

texture. I love that. Yeah. Like is it soft? Is it rough? Is it

cold? Is it hot?

What's the activity like? I think we used to call it like a black box activity or brown bag activity where...

we have...

you know, you put, like...

different materials and they have to reach in and kind of feel what it is. That could be a great opportunity to do that.

So... after that, I just want to remind you just like last time. Some IMSA resources that we have available right now is that "Ask a Specialist" program so...

And it's a one-on-one Zoom meeting with one of the members from our team. You just pick...

you know, your grade level, you know Pre-K, or didn't, you know, maybe you have an 8th grader at home who's struggling with their social

studies and you don't know what you want to do.

You can click on that link. It'll take you, and you choose the grade band, the content area, and your preferred date and time and you will have a meeting with, to speak with

someone.

And then we also have our Snack Boxes.

Which there is every are updated every week. There's a family-oriented one as well as Pre-K to second grade three to five, six to eight,

and high school. And it's all math and science activities that are free and

fun.

As for Little Steamers,

obviously we are very

bummed that you got, that we didn't get to see you guys a couple weeks ago and that you're not in your classrooms use it, doing all the fun Little Steamers activities, but we...

Hopefully this is helping out at least a little bit to get us you know kind of still in it until we can meet in the fall or summer whenever it

works out.

We have the subitizing webinar in case you missed that. This is a link that will take you to the recording of the subitizing webinar. This one will be up probably tomorrow.

May 4th...

Lindsey is going to talk about...

drawings. So all different types of drawings and ways to use drawings.

And...

on May 18th, I'm going to be doing another one on patterns. And then kind of depending on how things are going we might do one last one on loose

parts.

So...

[Linsdey] Really quick if I can jump in one second, Cassandra. So, May 4th the drawings one we're going to focus on directional drawings and observational drawing. So, and I'll send this out in the email just... I know all of you aren't too far from your materials, but you will need to attend with a piece of paper and something to draw with.

Minimal materials there for that one.

Perfect. Yay! And we had a couple people reach out about the timing we originally did these at...

in the evenings because

we thought, you know, school stuff was being done online and teachers were going to be busy during the day but I am going to share out a poll. Hopefully you can

see it.

So, for future webinars, we're going to stick to Mondays but what would your preferred time be? Morning? Afternoon? Or evening? And I'll leave this out for...

like 30 seconds or so.

You can also select more than one, like if you're, like,

like, you know, you can get free anytime it doesn't matter you're more than welcome to select any of them.

OK. It looks like it is slowing down. I'll leave it open for

like ten more seconds.

Okay it looks like most people have gotten their votes in.

So yeah. We're definitely going to take that into consideration. Again, we really just put...

evenings because we thought...

schooling was going to be happening during the day, but now that everyone's schedules are completely mixed up,

we really wanted to, you know, this is for you guys, and if you can't make it then it...

You know, what's the point? So whatever is best for you, we are trying to do. I'm also, I don't know if you know, I feel like my little black box on the bottom here is covering it. I also put a link down there to the questionnaire I think..

We had like seven or eight responses. It was a questionnaire that Lindsey had sent out

I believe like prior to...

Maybe about the first Focus Activity. It maybe in that email.

And it's just kind of some input about what...

you guys are hoping to get out of Little Steamers. Where you want to see Little Steamers go for the units 4,5, and 6?

Because we have units one, two, and three. Colors, water, and simple machines, but we really wanted at the professional development session to get your guys' input as to what kinds of activities and topics you would like to see.

So, if you haven't yet, we really appreciate it if...

you could fill out that questionnaire because again, it's, this is, you know, all for you guys, so we want to do whatever is most helpful for you.

So that being said...

The Moodle...

this recording is going to be on the Moodle. We have our little Steamers Focus activities.

Oh, and Lindsey put the link to that in the chat for everyone so thanks, Lindsey.

Under Focus Activities, I went in and changed it, so there is isn't an article in the Games and Activities folder, it's just a list of all of the

articles and lesson links

under the webinar folder. But that is there for you guys and if you have any questions about the Moodle, feel free to reach out to me or Lindsay and we can help you get logged in or get oriented with it or whatever you.

So, any questions before we are done for the night?

Okay. That was shorter than my normal wait time, but you guys have been really good about voicing your needs..

I think I think we're safe.

So I just want to say thanks.

Feel free to reach out. Again my name is Cassandra. Any questions me or Lindsay. We are here to help you or you know, make a "Ask a Specialist" meeting to talk one-on-one with somebody about anything specific.

But that is all I have for sorting thank you for coming.

[Lindsey] Thank you everybody for coming. I know some of us are... we made it in for the first time tonight... so we're excited to see you and so welcome some of you back. So I will continue on and see you in a couple weeks for some drawing activities and like, Cassandra said, in the meantime if you have anything you need, like, you know, I know we had talked about supporting parents as they're working with their preschooler. We're also here to help you if you have any you need any resources or any ideas in that arena as well.

But we hope everybody has a good week. Hang in there. Stay healthy. Stay home, right? Thank you. Alright.