ACTIVITY 5 HW 1: Children's Ideas about Light TRANSCRIPT

Movie: Mirrors

00:09:06	Teacher	Now do we have somebody on all four sides? Now, this is what I want you to do. You think about where you're standing and where the persons around your table are standing, and when your flashlight holder turns the flashlight on, who do you think is going to be able to look in that mirror and see the picture? What I want you to do is to kind of draw on your paper who's going to be able to see that, that - Predict and show me what you think, how you think the person or people that you think is going to see that light.
01:06:22	Student	Well the flashlight person is going to shine it at the mirror, and I think from our last thing we've been doing, it's going to go back to her, to the side person, to that side person and to the opposite person - cause the mirror has it all the way around.
01:19:10	Interviewer	So it's going to go all the way around?
01:20:20	Student	Um hum.
01:21:04	Interviewer	What if these people moved around? Say this person moved over here?
01:25:02	Student	I'd say he'd still see it.
01:26:02	Interviewer	He'd still see it so anywhere around the table, he'd still see it.
01:27:28	Student	Um hum.
01:28:24	Interviewer	Okay, let's have a look at-
01:31:17	Comment	(groups begin the experiment)
01:37:16	Interviewer	Can you see it now?
01:38:03	light holder	Yes.
01:38:18	Interviewer	Can you tell that you can see it?
01:40:26	flashlight holder 1	Yeah, cause it's got the reflection on-
01:44:08	Interviewer	Now can you really see the flashlight on the mirror, the picture of the flashlight?
01:48:10	student across from light 1	Yes, I can. Like where the light's coming.
02:03:28	Interviewer	Well, why don't you change places. Okay, everybody go around. Could you see it?

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02:11:23	student on the right of holder	Hum?
02:12:10	Interviewer	Could you see it in the mirror?
02:14:02	student on the right of holder	No.
02:14:20	Interviewer	No? Okay. Now give her the flashlight.
02:18:06	flashlight holder	Oh, okay.
02:21:28	Interviewer	Can you see it over there?
02:23:24	student across from the holder 2	Yes.
02:24:18	Interviewer	Can you see it?
02:25:08	student to the left of holder	No.
02:26:04	Interviewer	Can you see it?
02:27:10	student to the right of holder	No. So the opposite person can see it.
02:32:05	student to left of holder	Yeah, only the opposite person can see it.
02:33:08	flashlight holder 2	That makes sense.
02:34:06	Interviewer	Okay, let's make sure everybody gets a turn, move around again.
02:40:04	student across from the holder 3	Oh, I can see it big time! Yeah, I can see it. I can see the reflection from all sides.
02:52:24	student to the left of holder	Like the finger (inaudible) smudged it, that's where I can see it reflecting.
02:59:18	student	Should we switch?
03:01:16	student	Okay, switch. JR, JR, JR. (students move around the table)
03:08:22	student across from holder 4	Oh my goodness! I can so see it now!
03:11:26	student to right of holder	I, I can't see, I can see Josh's face but I can't see it.
03:15:10	Josh- the left of holder	I can see your face.
03:19:08	student across from the holder	It's turning around a little bit - like
03:22:13	flashlight holder	I almost had it.
03:23:16	discussion	(inaudible)
03:42:16	student to left of holder	So it's just the opposite person because it goes like this and it bounces off.

03:47:05	student to right of holder	Yeah! That's what I thought but - Some people can't even see it.
03:54:02	student across from holder	Yeah, could you see it? Try and look around a little bit like scoot -
03:58:00	student to left of holder	No, it's just the opposite person. It's like hitting here (motions her hand from the flashlight to the mirror.)
04:02:02	student across from holder	(pointing to student to left of holder) Over there I could sort of see it.
04:04:10	student to right of holder	(moving toward the person across from the light) I could see it when I was like right here.
04:05:28	student to left of holder	I can't see it at all.
04:05:24	Interviewer	So what do you think is happening here?
04:08:16	student to left of holder	I think opposite person can see it.
04:10:14	group	Yeah!
04:11:10	Interviewer	Only the opposite person could see it, why do think that is?
04:12:25	student to left of the holder	Well it bounces down hits the mirror and kind of goes like that (moves her hand from the light to the mirror and back up toward the face of the student across from the holder).
04:18:06	Interviewer	So what does it have to do when it gets over here, can you see it right now?
04:21:02	student across from holder	Yeah, I can see it in the mirror.
04:23:25	Interviewer	Okay but right now? Okay. Duck down a little bit. Now what about now?
04:29:24	student across from holder	Yes, I can see it.
04:32:00	Interviewer	Really bright now?
04:33:12	student across from holder	Yeah.
04:33:29	Interviewer	Why do you think she can really see it well right now?
04:36:08	student to right of holder	Because from what I see, it has to do with hitting her right there in the eye.
04:39:24	Interviewer	Okay so what is that?
04:41:05	student to left of holder	It's like where the light is bouncing off the mirror and hitting her in on her -
04:44:11	Interviewer	In her face? Alright, okay. Did everybody get a turn?

04:47:07	Group	Yes.
04:50:16	Interviewer	So why do you think you can't see it right now and you can't see it right now?
04:58:24	student across from holder	Well, it's kind of like it's angled down so it would be like that, so it's hitting it at an angle sort of -
05:06:12	student to right of holder	If you could move it, it would be like going like that.
05:10:06	student across from holder	-but if JR's (the one holding the light) right there and she's right there (pointing to the position to the left of the holder) it would be hitting it like, it would be hitting it at an angle and it would go into an angle to her.
05:18:02	Interviewer	Okay, so is there something special about the way the light behaves?
05:23:02	student to left of the holder	Well, it's kind of like when, we had the pinhole and the light goes the light goes through the pinhole, it goes up. I bet if we moved it down and we moved the mirror up, it would probably kind of go down.
05:35:23	Interviewer	Okay.
05:38:25	student to left of holder	(flashlight holder moves flashlight and image on student moves upward) See it's going up!
05:42:02	Interviewer	Oh okay. So, so do you think there's kind of a pattern there, in the light?
05:49:14	student across from holder	Well, it's shining sort of that way but the mostly directly going right there.
05:55:04	student to right of holder	You can see it, you can see it right there.
05:56:06	Interviewer	Okay, where's it going from there?
05:57:16	student across from holder	It's hitting and then it's going back to my face.
06:00:12	Interviewer	Okay, okay, I see, alright, thank you.
06:05:18	Teacher	I need to know at your group, Beth what did you guys discover at that group?
06:11:10	Beth	Um, you shine the flashlight on the mirror and it reflects off and (?) on the other person's eye, but the people across cannot see it because you're pointing it-
06:24:28	Teacher	You mean of all of these four people at your table only one person could see it?
06:28:25	Student	Um hum. Because it would bounce off and hit her it would go in her eyes.
06:34:18	Beth	And if you turned this way, it would do the same that way.

06:38:25	Teacher	So only one person at a time could see it, not all four of you, not even three of you.
06:43:30	Student	Right.
06:45:07	Teacher	‘kay. What did you discover Josh at your group?
06:47:17	Josh	Well we discovered, we thought, we found out that the - we started thinking at the end that the mirror could only reflect the light one way.
06:59:08	JR	Yeah, one way.
07:00:04	Teacher	So what does that mean?
07:02:10	Josh	That means that the light can only go in one direction.
07:07:08	Teacher	‘kay.
07:08:28	JR	We're shining it -
07:10:23	Teacher	So just one person at a time saw it at your table?
07:12:30	Josh	Yeah, right.
07:13:28	Teacher	And who was that, when you were holding it Josh that would have been?
07:16:10	Josh	Mary Beth