

PARENTS LEAGUE OF NEW YORK

Review 2013

Essential Articles on Parenting and Education

A Young Child's Understanding of Time

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When early childhood professor Lilian Katz gave a workshop at our school last March, she spoke against introducing calendar skills in early childhood classes—as research shows that children do not have a real understanding of time until ages seven to ten.

Since many of our teachers do the calendar, I set out to see how much our children, who range in age from three- to six-years-old, understand about time and calendar concepts. In May and June, I asked 51 of our students—all very bright young children—the following questions:

1. How long are you in school every day?
2. How long do you play on the roof/garden every day?
3. How long is the summer?
4. How long have you been going to school at Brick?
5. How many days are in a week?
6. How many days are in the month of May?

I did not expect accurate answers to these questions but was curious to see if the children had some sense of the concepts.

A Three-Year-Old: "Summer is 20 Miles Long"

Many of the 23 children who were coming out of our threes classes answered "I don't know" to most of the questions. Of those who

answered how long they attend school every day, only one child answered correctly “three hours.”

Children Age 3 years, 10 months to 4 years, 8 months
Verbatim Responses

How long are you in school every day?

17 days; 5 days; 6; 15; 10 minutes or so; 30 minutes; 10 minutes; 12 hours; 100 days; 100 years; 3:30; lots of times; every number; 3 hours.

How long do you play in the garden every day?

All day; 6 o'clock; 10; like about 3 minutes; 54 minutes; a little bit; a little time; 1 day; 5 hours; lots of time; 70 hours; 2 seconds; 5:30; 40 minutes.

Children who responded accurately to one of the questions above did not necessarily respond accurately to others. A child who correctly answered that he played in the garden for 40 minutes also responded that he was in school every day for 30 minutes. Another child who answered correctly that he was in school every day for three hours also responded that he played in the garden for six minutes.

How long is the summer?

An hour; 1 day; 5 days; 39; 16 days; so long; a long time; every day; 20 miles; 50,000 minutes; very long; 50 days.

The most reasonable answer to “how long is the summer” was 50 days, and was given by the oldest child in this age group. Any time a child gave a number without a unit of measure to accompany it, I would question further and in response the child would always add to the number without adding any unit of measure. For

example, when the child above answered “39,” I asked, “39 what?”; he answered, “39 hundred.”

How long have you been going to school at Brick?

I don't know; 1 day; 5 days; 7 days; 10 days; 16 days; 3 pounds; a lot; a lot of the days; a long time; so long; days and days; a long time; 100 days; 5 weeks; when my mom is done working; 15 years; 30 years—remember when I sang Feliz Navidad?; a whole year.

Only one child correctly responded “a whole year” when asked how long he had been attending our school, and three children knew there were seven days in a week. A child who answered the days of the week question with “Sunday, Monday, Tuesday, Wednesday” was asked again, “How many days?” to which he replied, “Every number on the calendar.” None knew the number of days in the month of May.

For a Five-Year-Old, “Summer is an Hour, Then Another Hour”

Our fours and fives classes do more calendar work and several of the classes have “100 day” parties, so I expected more reasonable answers from this group. I asked the same questions of 28 of them and—besides “I don’t know”—I got the following responses (listed in order of the age of the respondents from youngest to oldest).

Children Age 4 years, 8 months to 6 years, 5 months
Verbatim Responses

How long do you attend school every day?

1 minute; 5; 31—100 days; 12:00; 5 minutes; 12:00; I think like 45 hours or something; I don't know but my mom does; a very long time; 100; 5; 2 hours; 12; very long; 140 days; 45 minutes; an hour or two; after story time we can go home.

As with the younger group, when I asked for further information from children who gave just a number answer, they added more numbers to their initial response. For example, when one child was asked, “100 what?” he answered, “102,” and when another was asked, “5 what?” he answered, “25.” Two of the children gave “12 o’clock” as their answers; this is the time they are dismissed from school. One of these two children, however, gave “o’clock” answers to all the questions, including answering that the summer is “9 o’clock” long.

How long do you play on the roof every day?

5 minutes; I think it’s 10; 1 hour; 6 minutes or 5; 10 minutes; 2:00; different times—3 minutes; 3 minutes or so; a very long time; 8 hours; 5; long; 8 minutes; 2 minutes; very long; 1,300,000; 10 minutes; a long time but not when it’s raining.

How long is the summer?

An hour then another hour; 310 hours; 16 days; 104 days; 40 years; 5; 9 o’clock; a little bit long; really long; my pool is already open—very long; 40 hundred; June 30; 51; short; 7 minutes; 5 minutes; very long; 1,000; 2 weeks; a long time.

How long have you been going to school at Brick?

80 days; 10 minutes; 50 years; 100; 2:00; 10 days; a long time; They changed my job to do the mark off and I don’t remember how many days I’ve been in 4N; a very long time; I was little and I became a big boy and I came here—then all the days went by and I came to 4S; 100, a lot; a lot of time; 2 years; 2 classrooms; very long; 100; 40 years; since I was born.

Four children had a more sophisticated understanding of time in that they gave correct answers to more than one of the questions. One girl aged 4 years 8 months said the class played

in the garden for a half hour, the summer is three months long, and she had been at our school for two years. She also named the days of the week and said there were seven. She didn't know how many days are in the month of May, nor how long she was in school every day. Another girl aged 4 years 9 months said she was in school every day for four hours (which is true of our June program), she played on the roof for an hour (also true in June), the summer is 54 days and she had been at our school for two years. She also answered that there are seven days in a week and May has 30 days, but then said, "I'm just guessing."

One boy aged 5 years 5 months responded to the length of the school day: "On Friday and Monday, I go out at 12. Every other day, I get

out at 2:30." He said he played on the roof about 10 minutes (they play there usually for 30 minutes). He said the summer is 60 days long and he had been at our school for two years. He said there were five days in a week (true for school days) and 29 days in the month of May (close). Another boy aged 6 years 5 months said he didn't know to the first three questions but said he had been in school more than 100 days (his class had a 100 day party) and knew there were seven days in a week and 31 days in the month of May. In addition to those four children, five other children knew there were seven days in a week and three others responded that there were 30 or 31 days in May.

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Implications for the Early Childhood Classroom

Does all of this mean that Lilian Katz is right? Are teachers wasting time teaching time and calendar concepts in early childhood classrooms? For teachers of three-year-olds, my research supports this conclusion. Will classroom experience with the calendar help

four- and five-year-olds to reach an understanding sooner? Soviet psychologist Lev Vygotsky talked about the Zone of Proximal Development, which refers to the distance between what a child can do on his or her own and what the child can complete with adult assistance. Since the children in our fours and fives classes do all the calendar tasks with the teacher's help, it can be argued that they are in this zone for calendar work but, for most of them, this work does not translate to true understanding of time and the calendar. A separate argument can be made that, through

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calendar activities, children are learning other age-appropriate skills such as counting and one-to-one correspondence, and that the quantity of experience with adult support will eventually lead to true understanding.

How can teachers of three-year-olds help them to understand time concepts? Although they don't understand time, three-year-olds are comforted by a consistent schedule in school,

knowing that after activity time comes story, songs, snack, outdoor play and then time to see mommy again. The length of time spent on each activity doesn't matter but the sequence of events does. Pictorial representations of the schedule can help children to see how many more activities need to happen before they go home. Having the days of the week posted in the classroom with a symbol for the special activities for each day helps them to understand "I have music on Tuesdays."

During all the early childhood years, five-minute warnings before clean-up help children to understand that they don't

have much time left and should start winding down their activity. When our Studio teacher tells the children that they have a whole hour to work on their project, they understand that they can work at a slower pace and don't have to rush. Five-minute hourglass timers help children to take turns with coveted toys and to gain an understanding of what five minutes means. During the early childhood years, songs help children to learn rote information like the days of the week and the months of the year.

Dealing With the Concept of Time at Home

What are the implications for parents? Parents should realize that young children need some concept of time before they can delay gratification. They want what they want *now* because they have no concept of how long they will have to wait. This doesn't mean that parents should respond immediately to all wants and needs, as immediate response all the time will not teach children the necessary skill of waiting. Parents should be patient, however, realizing that young children do not understand time.

Consistent routines at home as well as in school help children to gain an understanding of time.

When parents go on business trips, children have no concept of how long they will be away. Parents can make time more concrete for them. For children who have some number concepts including one-to-one correspondence, putting a sticker on the calendar for the day of the parent's return and marking off each day can help the child to see how many days until the parent's return. For younger children, a basket with a short note and/or drawing in an envelope for each day the parent is away (five envelopes for five days) or a small, inexpensive, wrapped object for each day can help the child to count how many days are left until the parent returns.

Consistent routines at home as well as in school help children to gain an understanding of time.

Time can be relative for adults too. A series of rainy days may make parents of young children feel that early childhood is endless. On the other hand, those of us with children in their 20s think that time flew—and can't wait for grandchildren so that we may experience those precious years again.

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