Exploring Fire Safety

Preschool Classroom

Phase 2

The fire fighter talks with the class and answers students' questions.

Child's drawing of a fire fighter and a child being saved.

Students became active investigators in Phase 2 of the project. Small groups of students pursued one of the three researchable questions that guided the study. They collected data in many ways. They created surveys, interviewed experts, conducted experiments, and went on field studies. The morning choice board indicated their numerous studies and activities.

What can catch fire?

One group of children was curious about what could catch fire. To ascertain what they already understood about this question, the teacher asked them to make a collage with two categories: *What Catches Fire* and *What Doesn't Catch Fire*. They chatted with each other as they cut pictures out of magazines for their collages. When one child found a picture of ice, they discussed whether or not ice could catch fire.

TM: Maybe it will catch. Ice will melt.
IL: No fire won't catch because it is made of water.
RM: No because one time my father made fire of firewood and newspaper.
EMR No because ice is the same as snow.
IL: Snow is different from ice. If wax has a hole, it might catch!

After sharing their collages with one another, one child asked, "Does a clock start a fire?" The student created a questionnaire to find out what other people thought about clocks starting fires. The students asked their fellow preschoolers as well as the kindergarten-first graders next door. The students tallied the information and represented their findings in the form of a bar graph.

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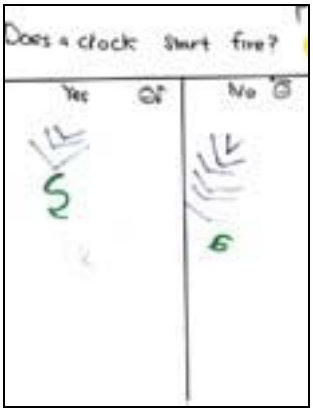
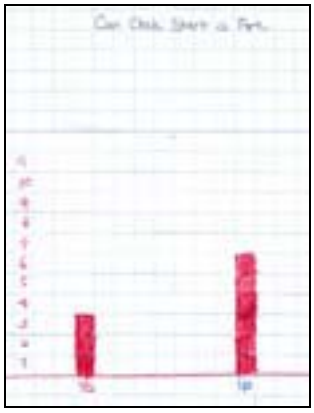


This is the student's questionnaire, "Does a clock start a fire?"



Twice as many students responded that a clock did *not* start a fire than responded that it did.

The teacher wondered why he wanted to ask the question about clocks starting fires. He told her that he saw a movie where a clock ticked and started a fire when it exploded. In the child's eyes, the clock DID start the fire.

Students wondered not only what burns, but how things catch fire. By questioning the fire fighters, children learned that fires need air and fuel to burn. The teacher set up an experiment to demonstrate this concept. For safety reasons, she put a candle inside a tall glass globe, and lit the candle. The children predicted what would happen if she placed a lid on the globe.

WK: It will burn the glass.
RM: Smoke will disappear.
TM: The lid will be caught on fire.
ER: Fire or flame will be gone.
IF: Smoke will disappear.

When they placed the lid on the candle, the children watched the flame flicker out slowly. The students concluded that air was not available for the candle. The teacher introduced the word oxygen in place of "air." The students shared their new knowledge at the next large group meeting. IF explained to the group, "When you put the top on the candle, the fire disappears because there is no oxygen."

Where do we find smoke detectors and fire extinguishers?

Students were curious about the safety features of the school because there is a very old fire extinguisher hanging by the door in their room. The teachers asked the students to predict and draw a picture of what they might find in the building. Before they left the classroom, they made a chart to tally the number of smoke detectors and fire extinguishers that they found. They

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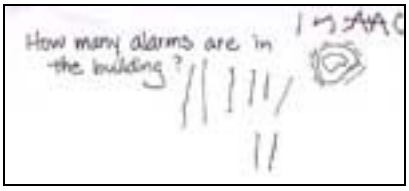
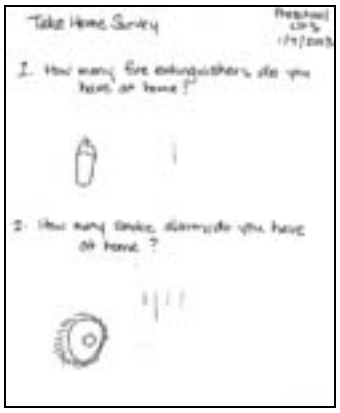
walked throughout the school that is housed in the ground floor of a campus building to look for smoke alarms and fire extinguishers. One student found seven fire extinguishers and placed tally marks on her chart to count them. Another student found eight smoke detectors on his tour. The students sketched fire extinguishers and smoke detectors that they found in the classroom.



The student tallied how many smoke detectors he found in the building.

The child drew the smoke alarm ringing.

Students created and sent home a survey to their parents to ask them how many fire extinguishers and smoke detectors they have in their own homes.



The student tallied the smoke detectors and fire extinguishers they found in their home.

The children compiled the data and made bar graphs to share their results. They used wooden cubes to visually represent the number of smoke detectors and fire extinguishers that students found in their homes. The students practiced using one-to-one correspondence as they counted a wooden cube to represent each tally mark. They found that most of the families had three smoke detectors and one fire extinguisher.

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A student adds cubes to the graph to show how many homes have smoke alarms.

Children work together to add cubes to the graph to illustrate how many fire extinguishers are in the homes of the preschool students.

Students were also interested in where smoke detectors and fire extinguishers were located in their homes. To help the students collect their data, the teachers sent home a child-friendly camera to take pictures of their smoke detectors and fire extinguishers. They found smoke detectors in various places from the attic to the basement. They found fire extinguishers in a basement, a laundry room, and a kitchen. Students shared their photographs at a large group meeting. The teacher included them in the final display.

One group decided to make a large representation of a fire extinguisher from boxes and junk. Members of the group listed the materials needed:

WK: A sprayer
MJ: A gold handle
MJ: Water
WK Meter/clock
IF: Cylinder shaped container (silver, red, yellow, big cardboard)
MP: Sticker with instructions

The children drew pictures of how their fire extinguishers should look. They used the fire extinguisher in their classroom as their model.

The fire extinguisher in the classroom.

A small group created this representation of the fire extinguisher using boxes and junk

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Some decided to make representations of smoke detectors and took another tour of the school to get a better idea of how they looked. Upon their return, they created three-dimensional representations of smoke alarms from boxes and junk materials.

Students found the smoke detector on the ceiling.

Representations of smoke detectors made out of boxes and junk.

What equipment does a fire fighter use?

The teachers invited several guest speakers into the classroom to help the students answer their questions about fire fighters and their equipment. These speakers sparked their interest in what they might find in a fire station.

Student Experts

When fire safety project began, three children wanted to bring their play fire coats and fire helmets to school. They wanted to talk to the whole group about fire safety. The teacher met with the three students and each chose a different topic to share. They took the role of a fire fighter seriously. WK demonstrated how his fire helmet shield went up and down. He ended his talk with "If your clothes catch on fire, STOP, DROP and ROLL." AW spoke about getting safely out of a house or school and calling 911. She said, **"**If there is a fire you go outside and to a neighbor's house. Then you call 911. Then the fire truck comes and puts out the fire. They can see your number on 911 so they know where you live.**"** RS demonstrated the various parts of the fire coat. The students became our first "fire experts." When "Fire Fighter WK" shared his outfit at a large group meeting, the students wanted to talk about it.

CB: I notice green and yellow.
RS: I have one like that. It's all yellow. But I don't have a helmet.
KM I like your fire fighter costume.

When RS and WK both wore their "fire fighting" outfits on another day, the children compared and contrasted the two. The teachers recorded their observations on videotape.

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KM: They are almost the same. But their buckles are different.
IPL: RS has orange buckles. WK has yellow buckles.
AW: They are not the same. One kind of lights up. This one doesn't. (She points to the two coats and talked about the reflective tape.)

The children compared their fire fighter coats in front of the class.

One of the teachers interviewed the two student firefighters during project/activity time. This was another opportunity for the teacher to evaluate what the students were learning about fire safety.

T: What do you think fire fighters do?
RS: Put out fires. They have the most important job just because they save people.
WK: They put out fires.
T: What is special about your clothing?
WK: So I won't get burned.
T: Why is it important?
WK: It just is. I learned you can get burned.

Fire Fighter Eddie

Teachers asked students if they had questions for Fire Fighter Eddie during a large group meeting several days before his visit. Some children made comments instead of asking a question. In subsequent group meetings, the teachers asked the children if they had any other questions or comments for Fire Fighter Eddie. The teachers documented their comments and questions on chart paper.

WK Pumpkins use fire.
TK: Do you wear hats?
MJ: Fire on you. Do stop, drop and roll.
ER: Does hot water start a fire?
KC: Does everything that is hot start a fire?
RS: Can a table that is hot start a fire?
IP: Do you push a button to hear the bells on a fire truck?

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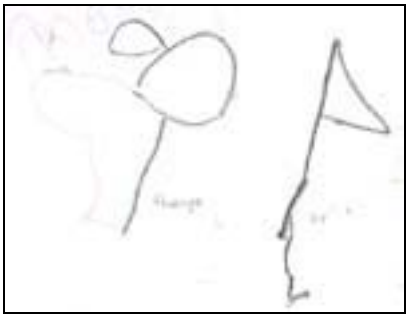
When Fire Fighter Eddie visited, he brought his gear and equipment. He passed around the helmet, gloves and coat for everyone to touch. He pointed out that the coat kept him warm in the winter but cool from a fire. There were Velcro pieces attached to keep the fire coat closed tightly. Fire Fighter Eddie pointed out how great this invention was! Our students insisted on using Velcro for their representation of fire coats, too!

One student asked if the fire fighter wore a hat. Eddie said that it's called a helmet. He placed a fireproof hood on his head. TK thought he looked like a ghost with it on his head. Eddie explained that it protected his ears and face from a fire. Then he placed his helmet over the hood. Before he left, he answered the students' questions.

ER: Does hot water start a fire?
E: No but it can burn you. See my helmet and how it is made. The back of it keeps hot water from dripping down my neck and burning me.
IP: Do you push a button to hear the bells on a fire truck?
E: Yes, red buttons.

Then he asked the children what a siren sounds like. The group responded enthusiastically. They knew how a siren sounded! Fire Fighter Eddie let the children take his coat into the dark bathroom to see how well the reflective tapes worked with a flashlight shining on them. Fire Fighter Eddie stressed that fire is a tool not a toy. He told the children that they have to be very careful with it. He went over the name of each tool and its use: helmet, gloves, badge, axe and coat before he left. Children made memory drawings the next day of the tools that Fire Fighter Eddie shared with the class.

This is a sketch of the equipment that Fire Fighter Eddie brought to share with the class.



This student drew the flashlight and the axe.

Trip to the Fire Station

To prepare for our visit to the fire station, the children predicted what color a fire truck would be. Various colors were written on the chart paper and children had an opportunity during the morning project/activity time to place a tally mark on the chart paper.

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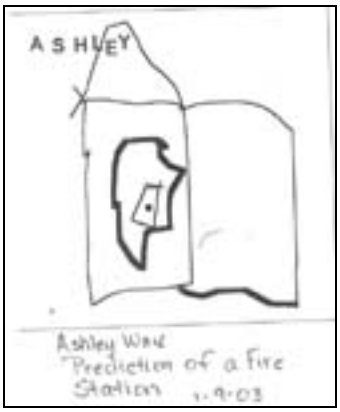
Red: IIIIIIIIIIII
Blue: IIII
Yellow: II
White: I

In a small group activity, children used Kidpix on the computer to draw pictures of what they predicted the fire station would look like. The teachers and children discussed the results of their predictions and shared their pictures at the end of the morning during the last group meeting.



This student used KidPix to draw a prediction of how the fire station would look.

A three-year old's KidPix drawing of the fire station.

In January, the class visited the main fire station located in downtown Champaign, IL. Two fire fighting experts talked with the students. A fire specialist educator at the station presented a puppet show to begin their tour. Then students practiced crawling under the "smoke" (represented by a blanket) to get out of the room safely. Next, they toured the fire station with Fire Fighter Mike. He showed them their living quarters the dining and kitchen area. The fire fighter opened the refrigerators so that the students could see the contents. The students learned that fire fighters pay for their own food and snack items. The number of refrigerators and stoves in the fire station amazed the children. MJ noticed the huge table in the dining area where all the fire fighters sit together to eat.

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At the fire station, the children practice crawling under the "smoke."

As the students went into the garage to view the fire trucks the alarm went off alerting us that someone had called 911. Fire Fighter Mike jumped into his gear and boarded the fire truck. Other fire fighters joined him quickly. When the fire truck came back the children examined and touched the truck. Three students measured themselves against the height of the tires.

The fire fighter's pants are lined up and ready next to the truck.

Children measure how tall the tires are on the fire truck.

Children get help holding the heavy hose as they try to flip the switch to the on position.

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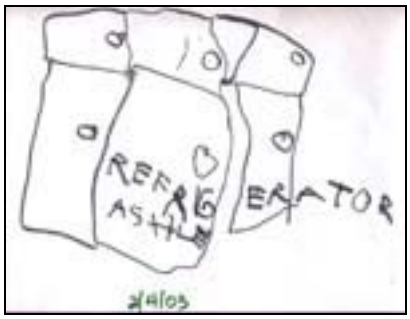
The children held the water hose and flipped the valve release pretending to let the water flow. Fire Fighter Mike dressed in each layer and explained why each item was important in protecting the fire fighters. Students asked Mike more questions.

KM: How do fire fighters put out fires without water?
NS: Do fire fighters hug their moms?
IL & RS: How do they make special suits for walking through a fire?
JG: How do the doors go up and the fire truck goes out at the fire station?
RM: How does a siren work?

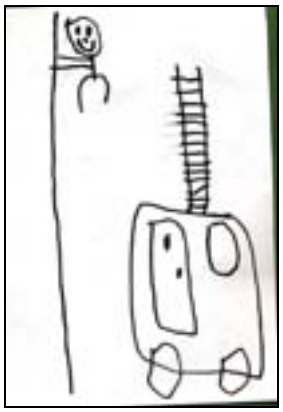
The fire fighter explains the safety features of his clothing.

The fire fighter has everything on but his gloves!

After visiting the fire station, children created memory drawings of their trip. At the large group meeting, the students decided that they wanted to turn their dramatic playroom into a fire station. But to make an accurate representation of the fire station, they still had more questions to ask experts.



Student draws the three refrigerators located at the fire station.



The student draws the firefighter sliding down the pole at the fire station.

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Fire Fighter Richard

In preparation for Fire Fighter Richard's visit, the students generated questions. Before his visit, the teacher asked him to focus on fire extinguishers and smoke detectors. This would give the group exploring these two items more information. He brought fire extinguishers and smoke detectors to share with the students. During his talk, the teacher recorded his responses to the children's questions.

The teacher reads over the questions that students generated for Fire Fighter Richard.

Students' Interview Questions	Fire Fighter Richard's Responses
MJJ: How do you get into a building that is on fire?	Keys, axe or a saw will let us get in the building. Sometimes we take windows out to climb in the building.
EGC: Are you a fire fighter?	Yes, I have been for 23 years. My dad was a fire fighter, too. I work 24 hours on and 48 hours off.
RS: Are you a fire chief?	I am a division chief.
KJM: Do any fires not get put out?	No every fire gets put out.
WK: Why are there foam guns?	Foam fights gas and alcohol fires. It acts like a blanket to smother it out.
CB: How do you put out a fire? What tools do you use?	Water and chemicals are used to put out a fire. Some of the tools are a ladder, saw, axe, prying tools and ladder truck.
IL: Why do you decide to save people?	It is our main job to make sure everyone is okay.
NS: Do you have smoke alarms when there is a fire?	Smoke alarms give you the biggest chance of catching a fire when it is still small. Every house is required to have one.
RM: Where do you sleep at the fire station?	In a bedroom. There's a living room, kitchen and more bedrooms.
IF: How does a fire start?	Someone does something they shouldn't have. It might be too many outlets or a cooking grease fire.

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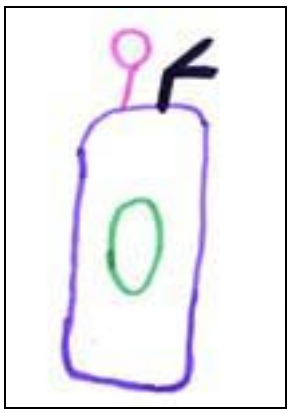
Students had more questions once Fire Fighter Richard arrived. At the end of his talk, Richard answered their final questions.

WK: What if the fire is at the fire station?
R: That would be bad. We are like MacDonald's (the restaurant). There is a fire station just five minutes away from anybody's house. We spread the stations out to cover everyone.
AW: Do you have two ladders or one ladder?
NS: Do you have a zillion fire trucks?
MSJ: Do firemen write letters to children?

After Fire Fighter Richard left, the children drew pictures of what they remembered from his visit. Many students drew the fire extinguishers to represent the ones he brought with him.



This is a student's drawing of a fire extinguisher.

This is a student's drawing of a fire extinguisher.

All of the classroom visitors brought reading material for the students and their parents. The fliers covered important safety information such as checking their smoke detectors to see if they are working properly, having a fire extinguisher near the kitchen or in a basement, and when to call 911. The fire fighters also told the children to practice getting out of their homes in case of fire. They instructed the children to work with their parents to develop an evacuation plan in case of fire in their home. Students learned that fire fighters are here to protect and save them.

Volunteer Fire Fighter Alan

One day a parent who was observing the school shared with the teacher that he was a volunteer fire fighter. The teacher asked him to speak to the class about his experiences. When it was time for the first group meeting the teacher introduced him to the students. They were worried because they did not have time to prepare questions. The teacher reassured the students that they might think of some after they listened to him. Fire Fighter Alan told the children that he had been a volunteer for seven years. He had saved cats from a burning house and helped people in car accidents. Soon the children had questions and the teacher recorded both the questions and responses.

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Students' Questions	Fire Fighter Alan's Responses
NH: How do you save little girls like me?	Make sure that you have a working smoke detector.
RM: How do you drive the fire truck?	Carefully. One person drives and another person runs the lights and sirens.
WK: Why do you go through red lights?	In two minutes a fire can double in size. We look both ways before going through the light.
MP: There might be more than one fire. What do you do?	We count on other small towns to help us. It is called "mutual aid."
NS: Do you save everybody?	We protect and try to save lives.
KM: Do cars pull over to the side when the siren goes off?	Sometimes yes and sometimes no.
WK: What if your smoke alarm doesn't have batteries?	You should change the battery twice a year. But check the smoke alarm every month to see if it works.

Literacy Extensions

As part of the every day curriculum, the teachers share literature with the students during large group meetings. Throughout this project, the teacher selected fire safety books to read to the children. Parents also brought in related stories. One parent donated a book entitled, *Do Fire Fighters Hug Their Moms?* This book prompted a student to ask the fire fighters if they hugged their moms. After teachers share books with the students, some students choose to participate in an activity that expands upon the concepts presented in the literature or teaches basic literacy skills. After students listened to *Goodnight Moon*, they created their own version and changed the words to the story.

Goodnight Fireman
by JG, WK, NS, CB, ML and MSJ

Goodnight Moon - JG
Goodnight Fire - WK
Goodnight Hat - JG
Goodnight Socks - ML
Goodnight Picture - NS
Goodnight Smoke - CB
Goodnight Old lady - MSJ
Goodnight Train - JG
Goodnight Bear - WK
Goodnight Mirror - ML
Goodnight Mr. Chimney WK

The teacher's husband visited the class and taught the *Chicago Fire Song* that he remembered from childhood. The children added motions to the song.

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One gray night when all were in bed
Mrs. O'Leary took her cow to the shed.
The cow got mad and kicked a lantern over . . .
There'll be a hot time in the old town tonight.
FIRE! FIRE! FIRE!

WK took the song's tune and rewrote (with the teacher's help) the words to be about snack time at school. The snack table is a favorite place for students to socialize and plan future activities in the classroom. WK added picture icons to his song to help other children remember the words. During the last group that day the children learned the new song.

Snack Time
by WK

One gray night, when all were in snack time.
Old Mrs. Mary took her cow to the shed.
The cow got mad and ate up all the food.
There'll be a snack time in the old town tonight!
Snacky! Snacky! Snacky!

WK adds pictographs
to his song.

The literature extension activities enable students to make connections between what they are learning and other aspects of their lives. Sometimes they start with literature and relate it to the topic like they did with *Goodnight Moon*. Other times, they start with the topic, in this case fire, and relate it to other things going on throughout the day and their lives. In the *Snack Time* song, the student composer began with a fire song and related it to his favorite preschool activity.

At the end of Phase 2, students had answered their questions and were eager to share their findings with their parents. They brainstormed how they would share the new knowledge with their parents and family.

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