

CHAPTER 4 RESULT

4.1 Summary results from the rubrics

4.1.1 A Cooking set

These tasks were divided into two parts. The first included three tasks and two in second two tasks.

4.1.1.1 First task

The researcher told the children to cook fried eggs but a gas stove was missing. The results from the rubric tables show that all children got 2 points. They skipped the missing object (a gas stove) (see Table 1.2).

The researcher told the children to make fruit smoothie and provided all cooking set which included a blending machine and a cup. However, the researcher did not provide any fruit for the children. The results from the rubric tables show that all children got 3 points. They extended play (see Table 1.2).

The researcher asked the children to compare ingredients between pork (the illustration that looked like the real thing.), pig illustration, a bad piggy (from the angry bird game application), and a piggy bank (see Figure 3.5). The results from the rubric tables show that all children got 3 points. They were able to refer the real thing (see Table 1.2).

4.1.1.2 Second task

The researcher provided the missing object (a gas stove) and gave the top view of a pan to the children (see Figure 3.6). The researcher told the children to cook fried eggs again. The results from the rubric tables show that a 3.3-year-old boy got 3 points. He extended the play. Other children got 2 points. They played quite normal by (see Table 1.3). The researcher told the children to make fruit smoothies and provided the tools like the first experiment. The researcher provided geometric fruit and vegetable ingredients to the children. The geometric fruit and vegetable ingredients were put into two sets of reality.

For the first set, the researcher provided geometric fruit & vegetable ingredients (see Figure 3.7(a)) and asked the children to indicate what it was. The results from the rubric show that all children got 2 points. The researcher had to guide for the children (see Table 1.3).

For the second set, the researcher provided the geometric fruit & vegetable ingredients but increased the salience of a symbol more than the first set (see Figure 3.7(b)). The results from the rubric tables show that all children were able to refer to the real things (see Table 1.3).

4.1.2 A Carpenter set

The researcher asked the children to build a house. However, it was not an obligation for the children. They were able to build anything they would like to. The result from the rubric tables show that a 3.3-year-old girl and a 3.4-year-old boy got 1 point. They

did not construct. Three girls got 2 points. They constructed by using traditional play. A 4-year-old boy and 5-year-old girl got 3 points. They extended the play (see Table 1.4).

4.1.3 A Medical doctor set

The researcher told the children to play without condition. The results from the rubric tables show that most children got 3 points. They were excited and extended the play. A 4-year-old boy got 2 point. It seemed that the children played normally (see Table 1.5).

Table 4.1 1st Cooking set Results Rubric

Index	Scores		
Quality	Level 1 (1 Point)	Level 2 (2 Point)	Level 3 (3 Point)
Cooking Set 1st <ol style="list-style-type: none"> The researcher told the children to cook fried eggs but a gas stove was missing. The researcher told the children to make fruit smoothie and provided all cooking set which included a blending machine and a cup. However, the researcher did not provide any fruit for the children. The researcher asked the children to compare ingredients between pork (the illustration looked like the real thing.), pig illustration or a bad piggy (from the angry bird game application), and a piggy bank. 			
1. Skip and extended play. (An egg fried)	Stop to play or ask about equipment	Play and skip a missing object	Imagine that there is a missing object or use other tools to replace a missing object.
Boy / 3.3-year-old		✓	
Girl / 3.4-year-old		✓	
Girl / 5-year-old		✓	
Girl / 5.4-year-old		✓	
Girl / 5.6-year-old		✓	
2. Playing process (No fruit)	Stop to play	Play, though no ingredients	Extended play
Boy / 3.3-year-old			✓
Girl / 3.4-year-old			✓
Girl / 5-year-old			✓
Girl / 5.4-year-old			✓
Girl / 5.6-year-old			✓
3. Real thing reference (Compare all pig)	Cannot make reference	Have to imply	Can make reference
Boy / 3.3-year-old			✓
Girl / 3.4-year-old			✓
Girl / 5-year-old			✓
Girl / 5.4-year-old			✓
Girl / 5.6-year-old			✓

Table 4.2 2nd Cooking set Results Rubric

2nd			
<p>1. The researcher provided the missing object (gas stove) and gave a pan in top view to the children. The researcher told the children to cook fried eggs again.</p> <p>2. The researcher told the children to make fruit smoothie and provided the tools the same as the first experiment. However, this time fruits were provided to the children.</p> <p>The fruit & vegetable ingredients were put into two steps of reality.</p> <p>2.1 The first step, the researcher decreased the salience of fruit & vegetable geometric and asked the children to indicate what it was.</p> <p>2.2 Second, the researcher provided the increase of the salience of fruit & vegetable geometric.</p>			
1. Playing process	Stop to play	Tradition play	Extended play
Boy / 3.3-year-old			√
Boy / 4-year-old		√	
Girl / 5-year-old		√	
Girl / 5.4-year-old		√	
2.1 Real thing reference (Fruit first step)	Cannot make reference	Have to imply	Can make reference
Boy / 3.3-year-old		√	
Boy / 4-year-old		√	
Girl / 5-year-old		√	
Girl / 5.4-year-old		√	
2.2 Real thing reference (Fruit second step)	Cannot make reference	Have to imply	Can make reference
Boy / 3.3-year-old			√
Boy / 4-year-old			√
Girl / 5-year-old			√
Girl / 5.4-year-old			√

Table 4.3 Carpenter set Result Rubric

Carpenter Set			
The researcher asked the children to build a house. However, it was not restricted for the children. They were able to build anything they want to construct.			
Construct understanding	Cannot play	Traditional play	Extended play
Boy / 3.3-year-old	√		
Girl / 3.4-year-old	√		
Girl / 4-year-old		√	
Boy / 4-year-old			√
Girl / 5-year-old			√
Girl / 5.4-year-old		√	
Girl / 5.6-year-old		√	

Table 4.4 Medical Doctor set Result Rubric

Medical Set			
The researcher told the children to play without condition and the researcher observed the children's play.			
Scale reference (Bigger than real things)	Ignore the objects	Traditional play	Excited and extended play
Boy / 3.3-year-old			√
Girl / 3.4-year-old			√
Girl / 4-year-old			√
Boy / 4-year-old		√	
Girl / 5-year-old			√
Girl / 5.4-year-old			√
Girl / 5.6-year-old			√

4.2 Detail of the results

4.2.1 A Cooking set

1. The first time

Task 1:

The researcher told the children to cook fried eggs but a gas stove was missing.

1.1 A 3.3-year-old boy

He did not cook a fried egg but he used a knife to cut an egg (see Figure 4.1). He put a bad piggy in a bowl (see Figure 4.2) and pretended to eat a bad piggy by a fork (see Figure 4.3).



Figure 4.1 Cutting an egg up



Figure 4.2 A bad piggy in a bowl



Figure 4.3 Eating Role play

1.2 A 3.4-year-old girl

She selected a finish-fried egg to cook and skip a missing object (gas stove). However, her mother implied that she should select an egg. Therefore, she selected an egg from an egg pack (see Figure 4.4).



Figure 4.4 Selecting eggs

1.3 A 5-year-old girl

She selected a finish-fried egg to cook and skipped a missing object (gas stove). When her parent told her to use an egg from an egg pack, she fried a finish-fried egg and an egg together (see Figure 4.5).



Figure 4.5 Cooking fried eggs and eggs

1.4 A girl aged 5.4 years old

She put an egg into a pan and changed a finish-fried egg by replacing an egg. However, she skipped a missing object (a gas stove) (see Figure 4.5).



Figure 4.6 Frying an egg

1.5 A girl aged 5.6 years old

She selected an egg for cooking and skipped a missing object (a gas stove) (see Figure 4.7).



Figure 4.7 Cooking fried egg

Task 2:

The researcher told the children to make fruit smoothies and provided all cooking sets that included a blending machine and a cup. However, the researcher did not provide any fruit for the children.

2.1 A 3.3-year-old boy.

He made a mixed egg and said this was egg juice (see Figure 4.8).



Figure 4.8 Mixing an egg

2.2 A 3.4-year-old girl

She tried to hold a blending machine up right and her mother told hers to pour water (see Figure 4.9). Therefore, she selected a jar and poured into a blending machine (see Figure 4.10). Moreover, she tried to insert a spatula into a handle of blending machine (see Figure 4.11).



Figure 4.9 Holding a blending machine



Figure 4.10 Selecting a jar and pouring ingredients into a blending machine



Figure 4.11 Inserting a spatula into a handle of blending machine

2.3 A 5-year-old girl

She was not able to find a fruit. Therefore, she put the meat into a blending machine and she told that she made ground meat (see Figure 4.12).



Figure 4.12 Ground meat

2.4 A 5.4-year-old girl

She tried to find a fruit but could not find any fruit. Therefore, she selected pork (the illustration that looks like the real thing.) to make ground pork and selected a cow to

make ground meat. She placed a cow figure behind the blending machine (see Figure 4.13).



Figure 4.13 Ground meat from a cow

2.5 A 5.6-year-old girl

She tried to find a fruit and stopped playing because another girl suggested her to mix the egg (See Figure 4.14).



Figure 4.14 The fired egg in the blending machine

Task 3:

The researcher asked the children to compare ingredients among pork (the illustration that looked like the real thing.), pig illustration, a bad piggy (from the angry bird game application), and a piggy bank (see Figure 3.5).

3.1 A 3.3-year-old boy

He played only a bad pig that comes from the angry bird game application.

3.2 A 3.4-year-old girl

She selected an elephant cartoon and called it an elephant. She used a knife to cut an elephant (see Figure 4.15). Then her mother implied that it was not the meat, so she selected the image that looked like real meat (see Figure 4.16). She switched to the chicken cartoon and cut it up. Moreover, she smiled and laughed.



Figure 4.15 Cutting an elephant up



Figure 4.16 Cutting meat

3.3 A 5-year-old girl

She said that she wanted to eat pork and selected a pig cartoon. The researcher pointed to a bad piggy (from the angry bird game application) and asked what it was. She told that it was a pig from angry bird. The researcher suggested a piggy bank and she could identify that it was a piggy bank. Then the researcher proposed her to play meat illustration but she still played a pig cartoon (see Figure 4.17). Furthermore, the researcher required her to cook a chicken and indicated a drumstick illustration, which looked like real thing. However, she still picked out a chicken cartoon (see Figure 4.18).



Figure 4.17 Comparing all pig characters



Figure 4.18 Chicken

3.4 A 5.4-year-old girl

She selected the pork illustration that looked like a real thing.

3.5 A 5.6-year-old girl

Although her parents recommended the pork (the illustration that looked like the real thing.), she always selected a pig cartoon (see Figure 4.19).



Figure 4.19 Choosing a pig cartoon

2. Second time

The second task was divided into two subtasks.

Task 1:

The researcher provided the missing object (gas stove) and gave a top view of a pan to the children (see Figure 3.6). The researcher told the children to cook fried egg again.

1.1 A 3.3-year-old boy

The parent asked what he should fry. He said “a fried grape” but he selected an apple and laid it on a top view of pan on a gas stove (see Figure 4.20).



Figure 4.20 A grape fried

1.2 A 4-year-old boy

He laid a finish-fried egg on a top view pan over a gas stove. He selected a glove and tried to do something. He changed to select an egg and laid an egg on a top view of pan (see Figure 4.21).



Figure 4.21 A fried egg

1.3 A 5-year-old girl

She selected a top view of pan and said that it was additional equipment. She hold a glove in her hand and place it on a pan over a gas stove (see Figure 4.22). Then, she put a whole chicken on a top view pan (see Figure 4.23). A researcher recommended other chicken but she ignored. Then she said “beef” and selected beef by holding it in her hand already wearing a glove. She placed beef on a pan. Later she cut beef.



Figure 4.22 Cooking steak



Figure 4.23 Fried steak

1.4 A 5.4-year-old girl

The parent showed a pan and asked her what it is. She answered correctly. Then, the parent showed a gas stove and asked the same question. She told about the place to lay a pan on. The parent asked how to lay it. She placed a top view pan on a gas stove (see Figure 4.24). Then the parent asked how the temperature was and she said that it was hot. Then, she threw a pan away. She laid a finish-fried egg on a pan but the top view pan was not laid on a gas stove.



Figure 4.24 A hot pan

Task 2:

The researcher told the children to make a fruit smoothie and provided the tools similar to the first experiment. The researcher provided a geometric fruit and vegetable ingredients to the children. The geometric fruit and vegetable ingredients were two sets imitating the real things. For the first set, the researcher had provided geometric fruit and vegetable ingredients (see Figure 3.7(a)) and asked the children to indicate what it was. After that, the researcher provided geometric fruit & vegetable ingredients, which increased the salience of a symbol more than the first set (see Figure 3.7(b)).

2.1 A 3.3-year-old boy

He was able to identify a grape and an orange. However, he could not indicate some fruit & vegetable ingredients of the first set such as an apple, mango, banana, and tomato. He said, "I don't know." After the researcher, showed the second set and asked back to refer back to the first set, he was able to refer an apple, a hand of banana and a tomato in the first set but he was not able to identify a mango.

2.2 A 4-year-old boy

He had placed the fruit & vegetable ingredients into a pot and boiled there. He did not answer any questions (see Figure 2.5).



Figure 4.25 Fruit & Vegetable boiled

2.3 A 5-year-old girl

She was able to identify a grape and an orange. However, she could not indicate some fruit & vegetable ingredients of the first set such as an apple, a mango, a hand of banana, and tomato. After being suggested, she was able to refer an apple, a hand of banana and a tomato in first set but she could not identify the mango. She said “This was an orange.” She compared a grape between two sets and said, “A stalk was worn out.” and she made a mixed apple juice (see Figure 4.26).



Figure 4.26 An apple blend

2.4 A 5.4-year-old girl

She was able to immediately identify a grape and an orange. However, She could not indicate some fruit & vegetable ingredients of the first set such as, an apple, a mango, a hand of banana, and tomato. She mistook a mango of the first set as she mentioned, “This was an orange.” After the researcher showed the second set and asked her to refer back to the first set. She was able to refer an apple, a hand of banana and a tomato in first set, but she could not identify a mango.

4.2.2 A Carpenter set

The researcher requested the children to build a house. However, it was not an obligation for the children. They were able to build anything they would like to construct.

1. A 3.3-year-old boy

He did not construct a house. He selected a carpenter’s plane and asked his father that, “What is this?” His father answered “a plane”. He used a plane as if he used a saw manner.

2. A 3.4-year-old girl

She did not construct a house. She played the screw by using a screwdriver (see Figure 4.27). She placed a top view of screw on a Phillip head on the wood board (see Figure 4.28). Moreover, she tried to pull a tape measure from the measuring tape until it was torn (see Figure 4.29). It showed that subject referred to the function of the real product rather than the function of the paper toy.



Figure 4.27 Screwing with a screwdriver

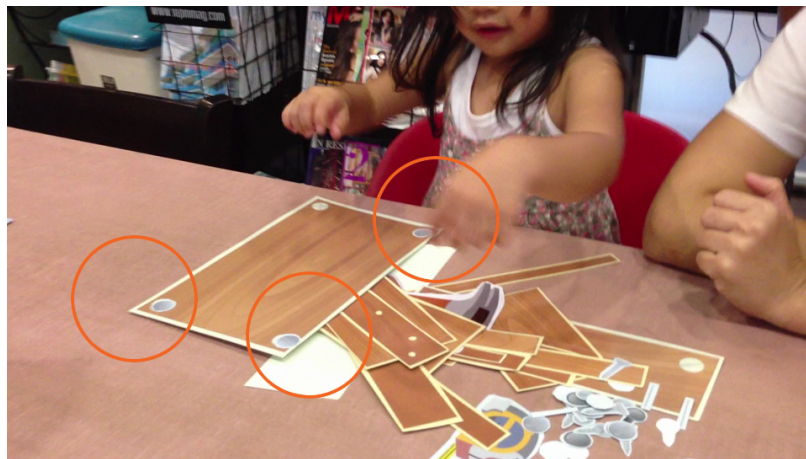


Figure 4.28 Matching screw



Figure 4.29 Pulling a measuring tape

3. A 4-year-old boy

He placed the screws on a wood board and knocked a hammer on its (see Figure 4.30) then he constructed a house (see Figure 4.31).

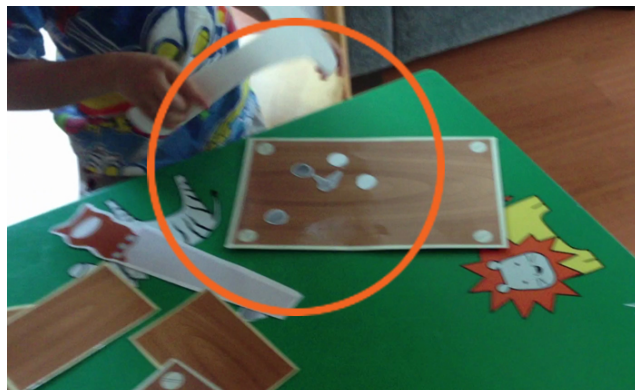


Figure 4.30 Knocking screws



Figure 4.31 A 4-year-old boy's house

4. A 4-year-old girl

She compared wood sticks. She selected a nail and said, "This is a sword." Then she rubbed a screw sign on a wood board and selected a carpenter's plane (see Figure 4.32). She tried to press a combination cutting (see Figure 4.33) and looked for something else. She matched a top view of screw on a screw sign of a wood board and screwed by a side view. She constructed a house (see Figure 4.34).



Figure 4.32 Selecting a carpenter's plane



Figure 4.33 Pressing a combination cutting



Figure 4.34 A 4-year-old girl's house

5. A 5-year-old girl

She selected a saw and said, “It was used for cutting a wood.” Her mother said, “It was a saw.” She selected a plane and asked her mother “What is this?” Her mother answered, “That is a carpenter’s plane.” She constructed a house by matching a top view screw on a screw sign on a wood board (see Figure 4.35). She used the screws to connect between wood boards (see Figure 4.36). When the house was finished, she put a cartoon character from a cooking set into the house (see Figure 4.37).



Figure 4.35 Matching a screw

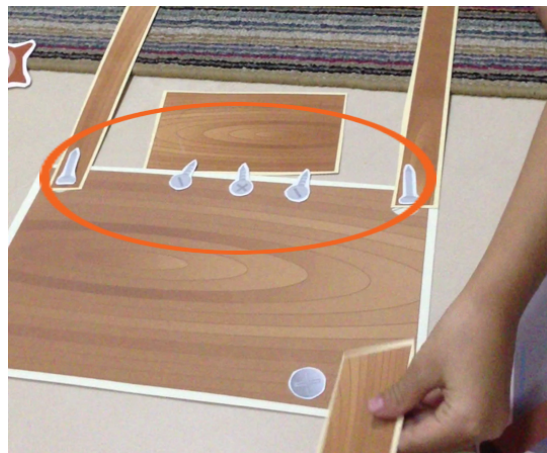


Figure 4.36 Screws connected between wood boards

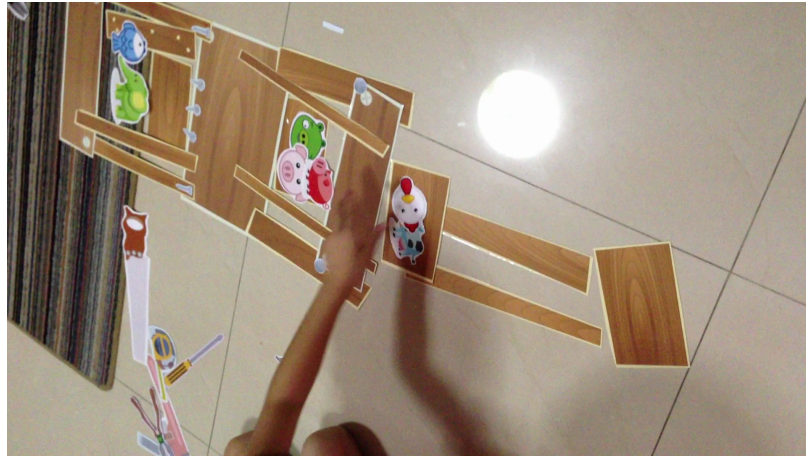


Figure 4.37 A 5-year-old girl's house

6. A 5.4-year-old girl

She did not use any equipment to construct a house (see Figure 4.38 and 4.39).



Figure 4.38 Symmetry construction



Figure 4.39 A 5.4-year-old girl's house

7. A 5.6-year-old girl

She selected a plane and asked her uncle “What is this?” He answered, “That is a carpenter’s plane.” His uncle told her about a plane function as well. She used a plane to reduce a wood board size (see Figure 4.40). She replaced a big wood board with a small size and gave it to her brother. She knocked a hammer (see Figure 4.41) on screw sign and used a screwdriver (see Figure 4.42) on a wood board to construct a house (see Figure 4.43).



Figure 4.40 Using a plane to reduce a wood board size



Figure 4.41 Knocking with a hammer



Figure 4.42 Screwing by a screwdriver



Figure 4.43 A 5.6-year-old girl's house

4.2.3 A Medical Doctor set

The researcher told the children to play without obligation.

1. A 3.3-year-old boy

He selected many things such as, a medicine bottle, and he checked them. He tried to cut a big capsule by scissors (see Figure 4.44) and he stuck a normal size plaster pad onto his sister. His mother asked, "What did you do?" Your dad has a big scar?" He moved a big plaster pad on his father's arm (see Figure 4.45). Simultaneously, her sister picked a normal saline solution and asked her father about this bottle. Her father told her that it was a normal saline solution. She gave it to the boy. He cleaned his father's arm and he said "saline solution". He played with scissors several times.



Figure 4.44 Cutting a big capsule by scissors



Figure 4.45 Sticking a big plaster pad on his father's arm

2. A 3.4-year-old girl

She smiled and chose a big syringe (see Figure 4.46). She loved to play with a big syringe. After that, she said, “The two big capsules (see Figure 4.47).” She tried to stick two big capsules onto her mother's face (see Figure 4.48). She stuck a big plaster pad on his mother's face and said, “It could not be stuck.”



Figure 4.46 Playing with a big syringe



Figure 4.47 Two big capsules



Figure 4.48 Sticking two big capsules on her mother's face

3. A 4-year-old boy

He wore a stethoscope around his neck and played with Ferby. He fed a small capsule to Ferby's mouth (see Figure 4.49). He injected a big syringe and injected a thermometer into Ferby's mouth. He injected a normal saline solution to Ferby's body. He tried to use the medical suitcase (see Figure 4.50).



Figure 4.49 Wearing a stethoscope touch on his neck while playing and feeding a small capsule into Ferby's mouth



Figure 4.50 Stand a medical suitcase up vertically

4. A 4-year-old girl

She picked up two big capsules and a big syringe several times (see Figure 4.51). She selected a medical suitcase. She picked up a digital thermometer and gave it to her mother. She stuck a small plaster pad to Ferby.



Figure 4.51 Playing with a big syringe

5. A 5-year-old girl

She exclaimed that “What a giant capsule!” and she chose it to play with (see Figure 4.52). She asked the researcher “Is it a giant capsule?” The researcher asked, “Could you eat it?” She said, “No, I cannot.” She went out to another room in her house to take a dolphin doll and small fish models. She assumed that a dolphin doll and small fish models were patients. She injected a dolphin with a big syringe (see Figure 4.53) and stuck a big plaster pad on a dolphin doll (see Figure 4.54). Then she injected every small fish model with a normal size syringe (see Figure 4.55). Moreover, she said, “It is not hurt.” She picked a small capsule up and said, “This is a small capsule but I do not

like liquid drug.” The researcher suggested her that a dolphin doll wanted to take a pill. She chose a big capsule and gave to it. She stuck a small plaster pad on small fish models (see Figure 4.56).



Figure 4.52 What a giant capsule it was!



Figure 4.53 Injecting a dolphin with a big syringe



Figure 4.54 Sticking a big plaster pad on a dolphin doll



Figure 4.55 Injecting every small fish models with a normal size syringe



Figure 4.56 Sticking a small plaster pad on small fish models

6. A 5.4-year-old girl

She picked a big capsule up and said “Such a big capsule.” She used a stethoscope touch to her brother (see Figure 4.57), and then she injected her brother with a big syringe (see Figure 4.58). She called her brother and said, “Come to have a checking!” She used a digital thermometer to check her brother. The researcher suggested her ordering a pill for her brother. She laughed and gave a big capsule to her brother (see Figure 4.59) and her father. After that, she gave a big capsule to her father and her mother (see Figure 4.60).



Figure 4.57 Using a stethoscope touch to her brother



Figure 4.58 Injecting her brother with a big syringe



Figure 4.59 Giving a big capsule to her brother



Figure 4.60 Giving a big capsule to her father

7. A 5.6-year-old girl

She picked a big capsule up and said “A huge capsule”. The researcher asked, “How do you inject a dolphin?” She searched for a syringe and picked a big syringe up (see Figure 4.61). She stuck a big plaster pad on a dolphin doll (see Figure 4.62).



Figure 4.61 Picking a big syringe up



Figure 4.62 Pasting a big plaster pad on a dolphin doll