

“Emotion Dolls” Interpretation Guide

EXPLORING THE ROLE OF STORIES AND FACIAL EXPRESSIONS IN THE DEVELOPMENT OF CHILDREN’S CONCEPTS OF EMOTION

Background:

Children use a variety of methods to help them identify an emotion, including: narratives about an emotion, specific facial expressions, verbal labels, and their own experiences with emotion causes and consequences. Identifying emotions is a key aspect of a child’s development - as children age, the methods by which they identify emotions may change. A study directed by Boston College investigated both the labels children use to identify emotions and the effectiveness of different cues in identifying basic emotions (e.g. happiness, anger, surprise, fear, disgust, contempt) and “social emotions” (e.g. embarrassment, compassion, shame/guilt). The “emotion dolls” research toys are based on experiments these researchers used to explore children’s emotion identification.



Researchers recruited participants ages 4 to 10 years to determine what labels a child would create for various emotion expressions. They also examined whether hearing a narrative describing an emotion or viewing a facial expression would be a better identifier of basic and “social emotions” for children. In all cases, the researcher began by telling the participant a story about a character displaying happiness and then showing the participant a picture of the character with a happy expression. The researcher would then ask the child how they thought the character was feeling. This “warm up” ensured the participant had an understanding of the two ways emotion was being explored in this study.

Participants then experienced one of two conditions – in the first condition, researchers displayed only pictures of faces depicting various emotions (e.g., happiness, anger, fear, surprise, disgust, embarrassment, compassion, shame/guilt, contempt); in the second condition, researchers told the participant stories in which the various emotions were depicted. In both conditions, researchers asked participants how they thought the character was feeling after each face or story was presented. The researchers recorded the emotion labels participants assigned to each face or story, and whether that label was correct. Researchers hypothesized that children would first understand emotions as broad categories, and then develop a better sense of emotions as they develop. Likewise, they thought children would distinguish negative emotions from positive emotions by examining facial expressions. Widen & Russell (2010) describe research that found a downturned mouth or tears hints to children that an individual is displaying a negative emotion - this idea was the starting point for researchers to investigate whether facial expressions were the initial cues for labeling emotions.

Researchers Found:

1. Overall, stories elicited more correct identifications than facial expressions - especially for fear, disgust and the “social emotions” (e.g. shame/guilt, embarrassment, compassion).
2. Surprise was the only emotion for which a facial expression was a stronger cue than the story.

3. The only emotion for which faces and stories were equally strong cues was anger, an emotion that over 90% of participants in all age groups were able to identify correctly.
4. Younger children tended to group “social emotions” (e.g., shame/guilt, embarrassment, compassion) into basic emotion categories (e.g. sadness or anger), whereas older children were able to create more specific categories and correctly identify more emotions specifically.
5. Children’s ability to identify emotions increased with age in both cases, but more gradually in the facial expressions condition than in the story condition.

Note: “happiness” was used as a “warm-up emotion” in the study (previous research had found that - by four years of age - kids can reliably identify this emotion), and is therefore not included in a discussion of the study results.

These results showed that as children grow older, the importance of scenario increases and becomes proportionally more important than facial expressions, particularly in identifying “social emotions.” This supported the researchers’ hypothesis, confirming that as children develop they tend to differentiate emotions with a finer grain (using more, new categories), rather than assimilate them into existing categories.

Why is this important?

Gaining the ability to identify others’ emotions is an important aspect of understanding interpersonal relationships. Various sources contribute to an emotion concept, including facial expressions, verbal labels, narratives or scripts describing emotion, and children’s experiences with emotion causes/consequences. The original study investigated how strong certain cues were in helping a child form an emotion concept, and whether this changes with age.

By investigating how children interpret emotion, we gain insight into how children understand the emotional situations they encounter in life, and effective ways to help a child understand those situations. For example, to express happiness to a child, a facial expression may be enough, but in order for them to understand an emotion such as disgust or guilt, an explanation may be necessary. Children learn later-emerging emotions by experiencing or observing events that produce these emotions, rather than by observing facial expressions. Exposure to emotional events helps broaden their understanding. By understanding the central cues children use to construct concepts of emotion, we gain a deeper understanding of how children view their world and others. An important aspect of parenting is the ability to understand how a child is feeling, which allows parents to tend to their child’s needs more efficiently. Understanding the emotions of children can be difficult, but with practice parents learn to read their child’s emotions and find ways to communicate emotions that might need to be explained.

Method:

Recruiting Methods:

1. Explain to parents that you are demonstrating a completed study from Boston College that investigated how effective different cues are in helping children identify emotions. Ask if their child would like to play a game with you!
2. Invite a child to be a face detective with you! Ask them if they would like to play a mystery game, and show them the dolls to increase their interest.

Important Modifications:

- In the original study, researchers showed participants either the facial expressions condition or the story condition; in the museum activity, we have combined these conditions so visitors can experience both.
- The original study contained 9 different emotions for participants to identify. For the museum adaptation, we removed the “compassionate” and “embarrassed” emotions, and added “sadness”. These modifications were made for the museum environment because in the Discovery Center most of the visiting children are under 8 years old and (based on the study findings) we didn't expect them to be able to identify “compassion” or “embarrassment”. We added “sadness” because (during piloting) this was an emotion we found children could easily identify.

Materials:

- Two plush dolls (1 girl, 1 boy)
- 16 emotion faces (8 girl, 8 boy)
 1. Happiness
 2. Sadness
 3. Anger
 4. Surprise
 5. Disgust
 6. Shame/Guilt
 7. Contempt
 8. Fear
- 16 emotion stories (8 girl, 8 boy)
 1. Happiness
 2. Sadness
 3. Anger
 4. Surprise
 5. Disgust
 6. Shame/Guilt
 7. Contempt
 8. Fear

Activity Instructions (the “study method”):

****Script is included in Appendix A at the end of the guide****

1. Ask the child if s/he knows any feelings. This “warm up” is done to ensure that children are aware of basic emotions. If the child is unable to recall any feelings, the interpreter can simply say “feelings are things like happy or sad.” Tell the child that s/he will be helping you be a face detective today by trying to figure out how your friends are feeling.
2. Display the dolls to the child. Ask the child if s/he notices anything unusual about the dolls (they have no faces!). Explain that this is because the dolls have lots of different feelings sometimes.
3. Pick a doll to use, and tell the child that you are going to give him/her some clues about how the doll is feeling. Place the ‘happy’ face on the doll, and tell the child the ‘happy’ story, while displaying the doll. Ask the child how s/he thinks the doll is feeling.
4. Place a facial expression on the doll and display it to the child. Tell the child, “One week later, my friend felt like this!” Ask the child how s/he thinks the doll is feeling.
5. Repeat step 4 for all emotions.
6. Without displaying any face on the doll, tell the child a story about the doll, beginning with “One week later...” Ask the child how s/he thinks the child is feeling – for older children, encourage the child to supply his/her own emotion labels. For toddlers (who might not be

able to spontaneously come up with an emotion word), ask them to pick which of the faces they think matches how the child in the story was feeling (see “Activity Tips” below).

7. Repeat step 6 for all emotions.
8. When all the stories have been told or whenever the child is done, thank the child for playing with you, and explain to the parent what the research was about and how the results show us how children interpret emotion.

Activity Tips:

Help Parents Observe:

- What words do children use to describe various emotions?
- How many different labels do children use in identifying emotions?
- Are children more able to identify emotions through stories or faces?

Keeping Kids Interested:

- For the facial expression condition, kids may ask why the character felt that way a week later. In this situation, see if they can create their own cause and consequence story. For example, ask, “Can you think of any reasons why my friend felt this way?”
- If a child has experienced all the facial expressions and stories, invite them to create their own stories with the dolls and use faces they think would go along with how the doll is feeling. Ask the child what features on the face helped them identify that emotion, by asking something along the lines of “What about my friend’s face tells you they are feeling happy?”
- Ask the child which story or facial expression was their favorite and why.

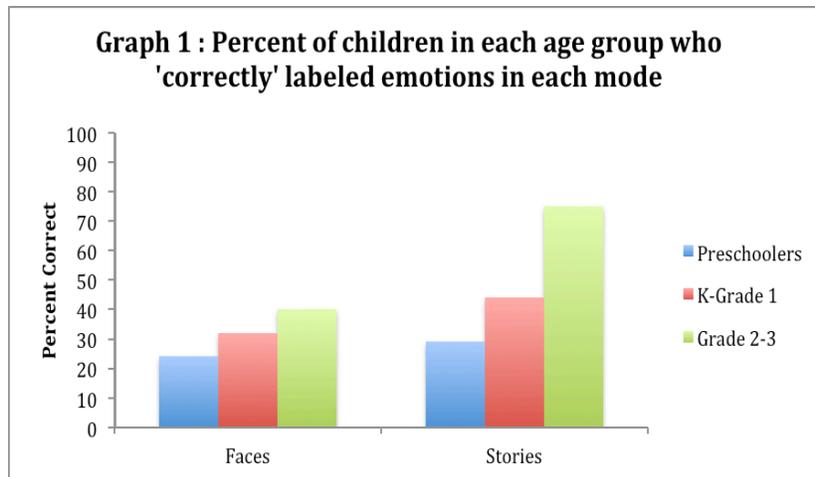
Engaging Younger Visitors:

- With younger children (who might not remain engaged for all 8 stories), try using just 4 of the emotion stories: happiness, anger, surprise and guilt.
- Younger children (e.g., toddlers) are likely to have less sophisticated vocabulary when it comes to emotions, but they still enjoy participating in the activity. Modify the activity so that all the faces are displayed to the toddler at the beginning of the activity, and ask the child to match each story to a face on the table.

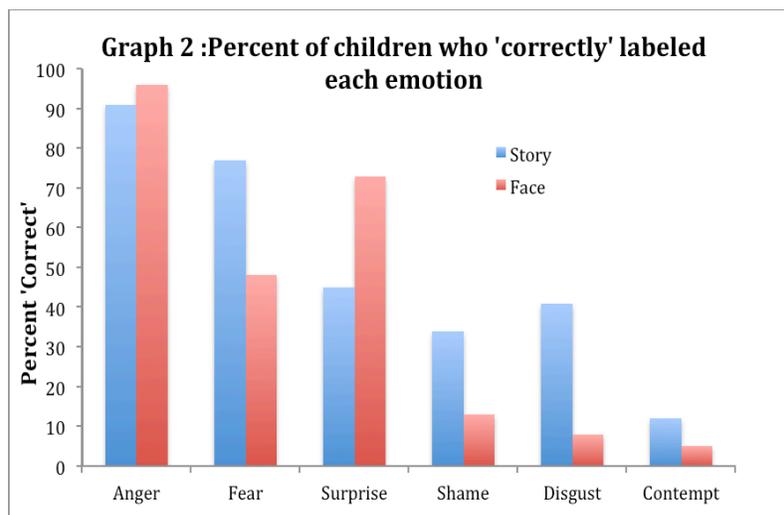
Results of the Original Study:

- Children correctly identified more emotions in the story condition than in the facial expression condition, indicating stories are more reliable in helping children identify emotion.
- Stories were a stronger identifying cue for most emotions with the exception of surprise, in which facial expressions were a stronger cue.
- Older children correctly labeled more emotions than younger children did, and also used more varied labels than younger children used.

For all ages included in the study, children correctly identified more emotions in the story condition than in the facial expression condition. This is illustrated in Graph 1 (below), which shows the proportion of correct emotion labels for different age groups in both the faces condition (on the left), and the stories condition (on the right). This graph also shows that older children were able to correctly identify more emotions than younger children.

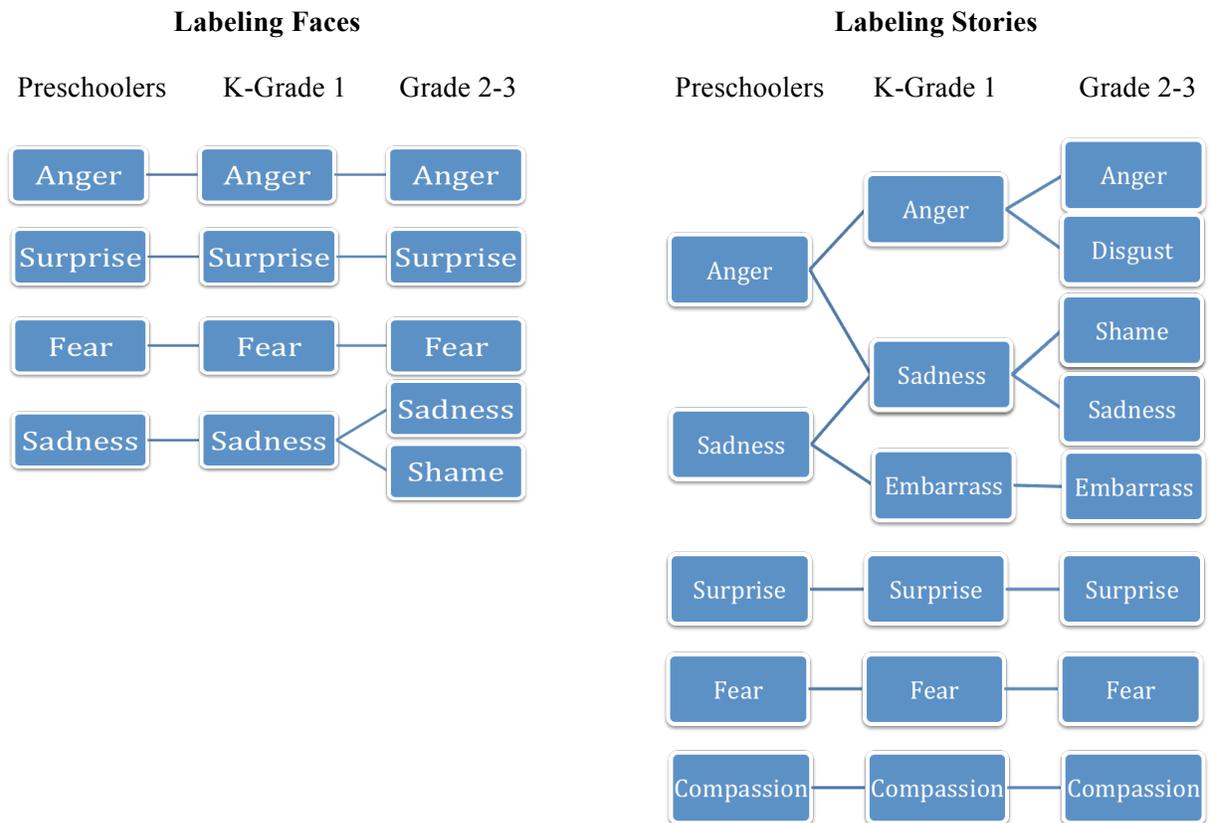


For most emotions - including fear, disgust and the “social emotions” (e.g. shame/guilt, embarrassment, compassion) - stories were a stronger identifying cue for children in the study. For “surprise”, facial expressions were a stronger cue for children in correctly identifying the emotion because surprise can be either a positive or a negative feeling – stories may have a confounding effect on a correct identification while the facial expression alone allows children to more easily identify this emotion. Graph 2 (below) illustrates the proportion of children who correctly identified each emotion in the story and face conditions. This confirmed the researchers’ hypothesis that while faces may be a strong cue for children in identifying basic emotions, emotion-causing events are stronger cue overall; this was especially true for later-emerging emotion categories (e.g. “social emotions”, fear, and disgust).



This study also found that while younger children tended to group emotions into categories they were familiar with, older children would differentiate the emotions further by creating more labels/categories. The chart below shows the labels children used for the emotions in the study at different ages, for both the faces condition and the stories condition. Fewer labels were used, especially at a younger age, in the facial condition than in the story condition. There was also a

sharper increase in number of labels used by older children in the story condition, when compared to the facial condition. This supported the researchers' hypothesis that as children develop, so does their understanding of and vocabulary for emotion.



**See Appendices B & C for larger version of the graphs and chart.*

Questions Parents May Ask:

- *What age does my child have to be in order to participate?*
Participants ages 4-10 were used in the original study. However, the Discovery Center welcomes visitors of any age to participate in the interpretation, as it exists for the purpose of educational opportunities. These opportunities may occur with visitors of any age.
- *Did my child “pass”?*
There are no correct or incorrect answers; thus there is no way to assess if your child has passed or failed. The purpose of this research interpretation is to observe the variety of strategies children use to help them identify an emotion.
- *When will my child learn to identify “social emotions?”*
All children’s development is different, as is their exposure to certain emotions. Thus, there is no specific age at which a child learns to identify a specific emotion.
- *Where can I learn more about this?*
Visitors can find more information about this study, and how children understand emotion generally, on the researcher’s website: <https://www2.bc.edu/sherrilea-widen/> .
- *Why do stories work better in helping children identify emotions rather than faces?*

The results suggest that children learn later-emerging emotion categories (e.g. “social emotions”) through experiencing or observing events eliciting those emotions, rather than by viewing the facial expressions that describe them.

- *Is there a particular reason why you’ve decided to use pictures of real faces on toy dolls?*
Using real faces was an easier way to depict the emotions, compared to a drawing the faces, and provided a better cue for children to identify different emotions.

Activities for parents to try at the Museum:

Children’s Gallery: Play with the forest animals around the children’s gallery! Make up stories about what the animals might do as they hunt, play, sleep or explore. Ask your child how they think these animals might feel! How would the chipmunk feel if the wolf pounced on it? How would the wolf feel? What cues does your child use to figure this out?

Infant Area: Take out the Social Referencing Discovery Box on the bookshelf. See if your child reacts differently when you act happy about a toy as opposed to acting sad or angry about it. Do they identify your emotion? Do they react to different emotions in different ways?

Physical Science: Help your child build a house for the “people” blocks or try to complete other block-building challenges! Ask your child how they feel when they meet obstacles or face challenges in their design. See how many words they can use to describe their emotions!

Activities for Parents to Try at Home:

Try reading a story or watching a movie with your child. Pause at certain points throughout the book, show, or movie and ask your child how they think a character is feeling. What emotions does your child identify? Does your child’s identification change when hearing about a character as opposed to seeing them onscreen? Good examples of storybooks that discuss emotions are the *Arthur* series and stories by Beatrix Potter (e.g. *Peter Rabbit*).

Ask your child how they feel at various points throughout the day. Can they identify what made them feel that way? What events make them feel certain ways? Are they happy or sad because of something that happened at school, or at home?

Sources and Resources:

Widen, S. C. & Russell, J. A. (2010). Children's scripts for social emotions: Causes and consequences are more central than are facial expressions. *British Journal of Developmental Psychology*, 28, 565–581. doi: 10.1348/026151009X457550d

Appendix A - Emotion Concepts Stories

**note: These stories were modified for the museum environment from those used in the original study. Each story can be used with both the female (Laura) and male (Tyler) characters.

Happy: It was Laura’s birthday. All her friends came over to celebrate! Laura ate cake and got lots of really nice presents. She jumped up and down and clapped her hands.

Sad: Laura was walking down the street eating her favorite flavor ice cream when it fell on the sidewalk. She had tears in her eyes. She wanted a hug.

Angry: Laura was eating dinner with her family when her brother flung a clump of mashed potatoes at her face. It got stuck in her hair. She stomped her foot and yelled at her brother.

Surprise: Laura was sitting on her couch watching TV when her brother came into the room. She didn’t notice him, so he snuck up behind her and shouted “Boo!” Laura jumped off the couch and looked around quickly.

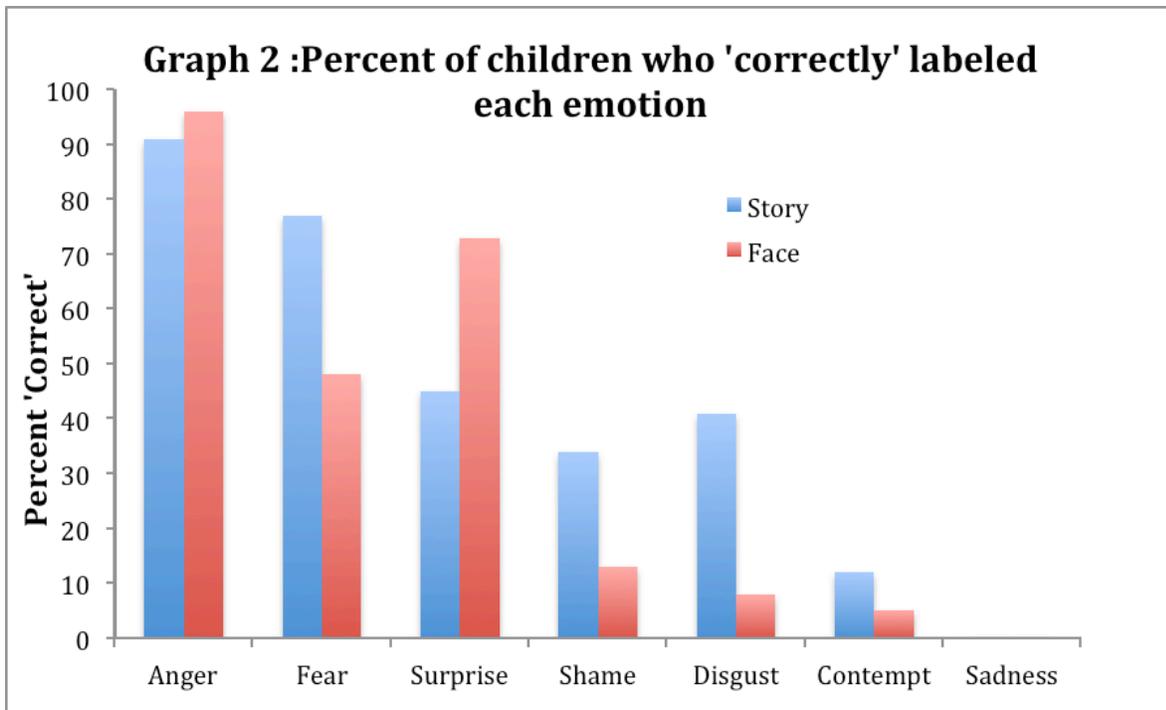
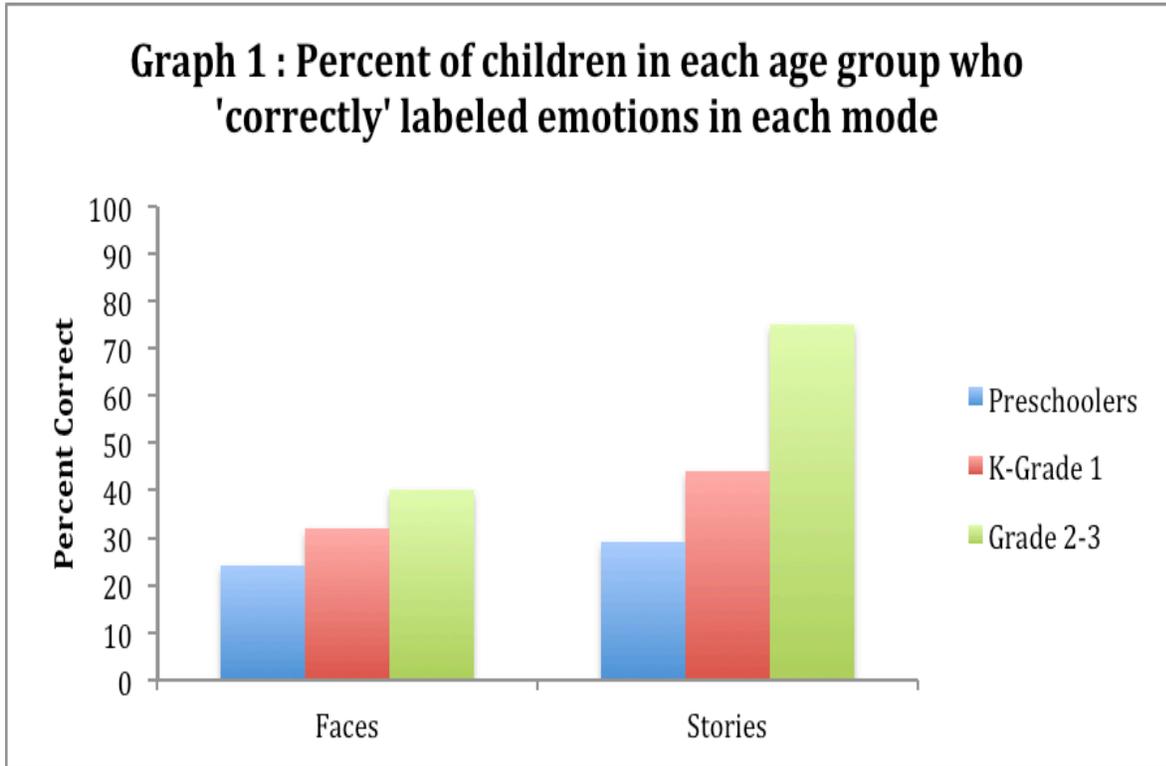
Disgust: Laura was eating a sandwich. All of a sudden, she realized there was a bug crawling on it. She spit it out as fast as she could and threw it away. She didn’t want to touch it anymore.

Contempt: Laura’s teacher made a new rule for the class – no one was allowed to go to recess unless everyone finished their lunch. Laura thought this was a pointless rule. She didn’t want to follow the rule and complained about it to her friends.

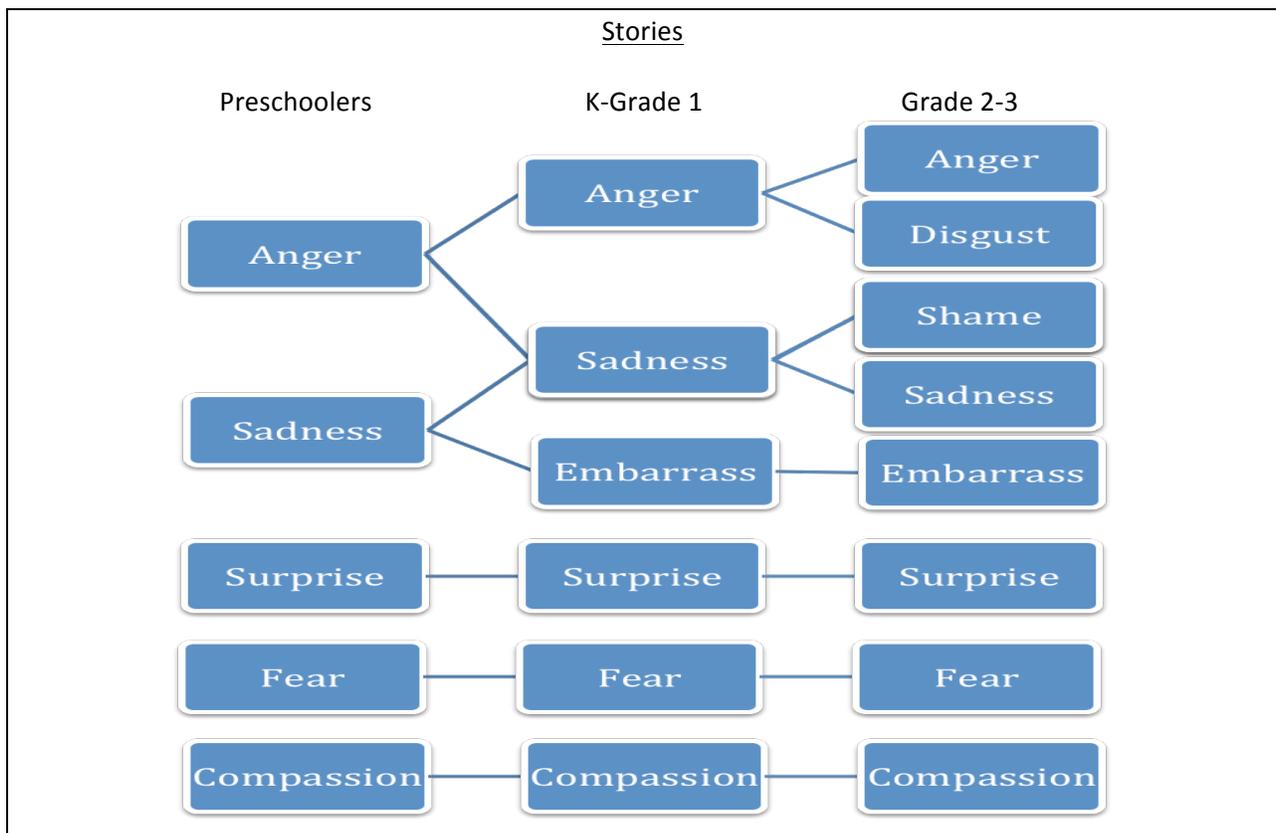
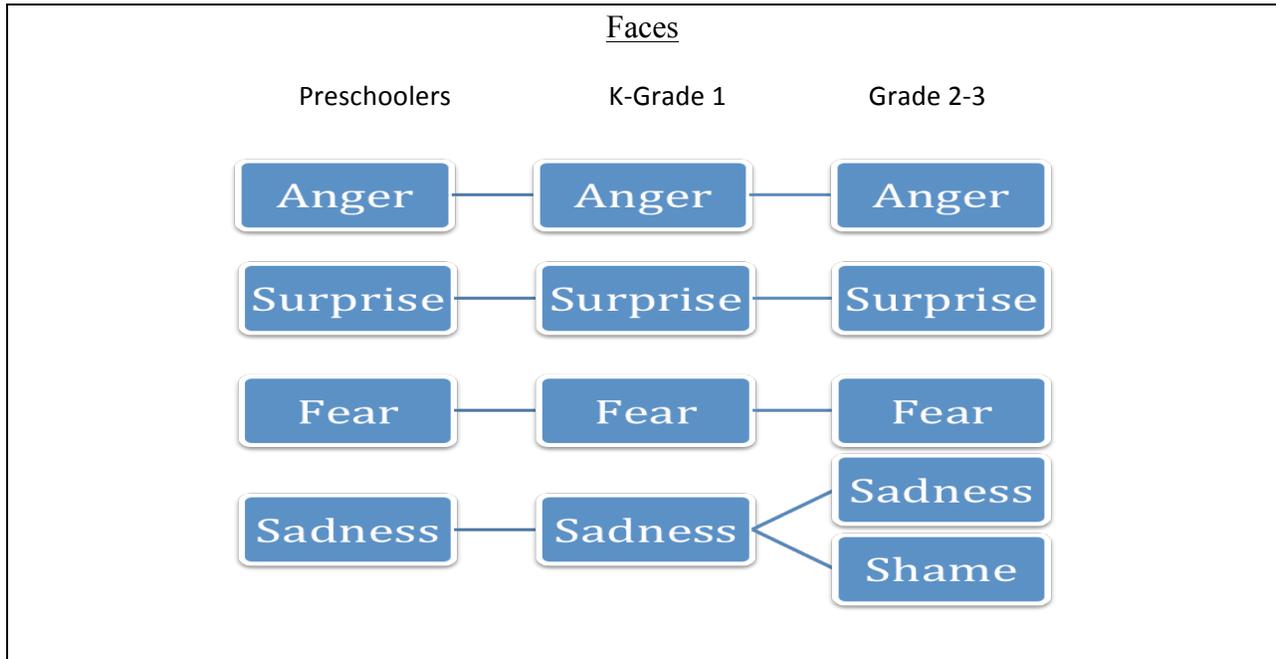
Shame/Guilt: Laura scribbled all over the walls of her house. When her mom saw it, she was very upset. Laura wished she could erase the scribbles, but they were in permanent marker. She stayed in her room all day and didn’t talk to anyone.

Fear: Laura was walking in the woods when she saw a big snake. It started coming toward her really quickly. Laura screamed and ran away as fast as she could.

Appendix B – Large Versions of Graphs



Appendix C - Classification of “Basic” and “Social” Emotions



Appendix D - Face Images for Dolls



Sadness



Surprise



Anger



Disgust



Fear



Contempt



Shame/Guilt



Happiness



Sadness



Contempt



Anger



Happiness



Disgust



Shame/Guilt



Fear

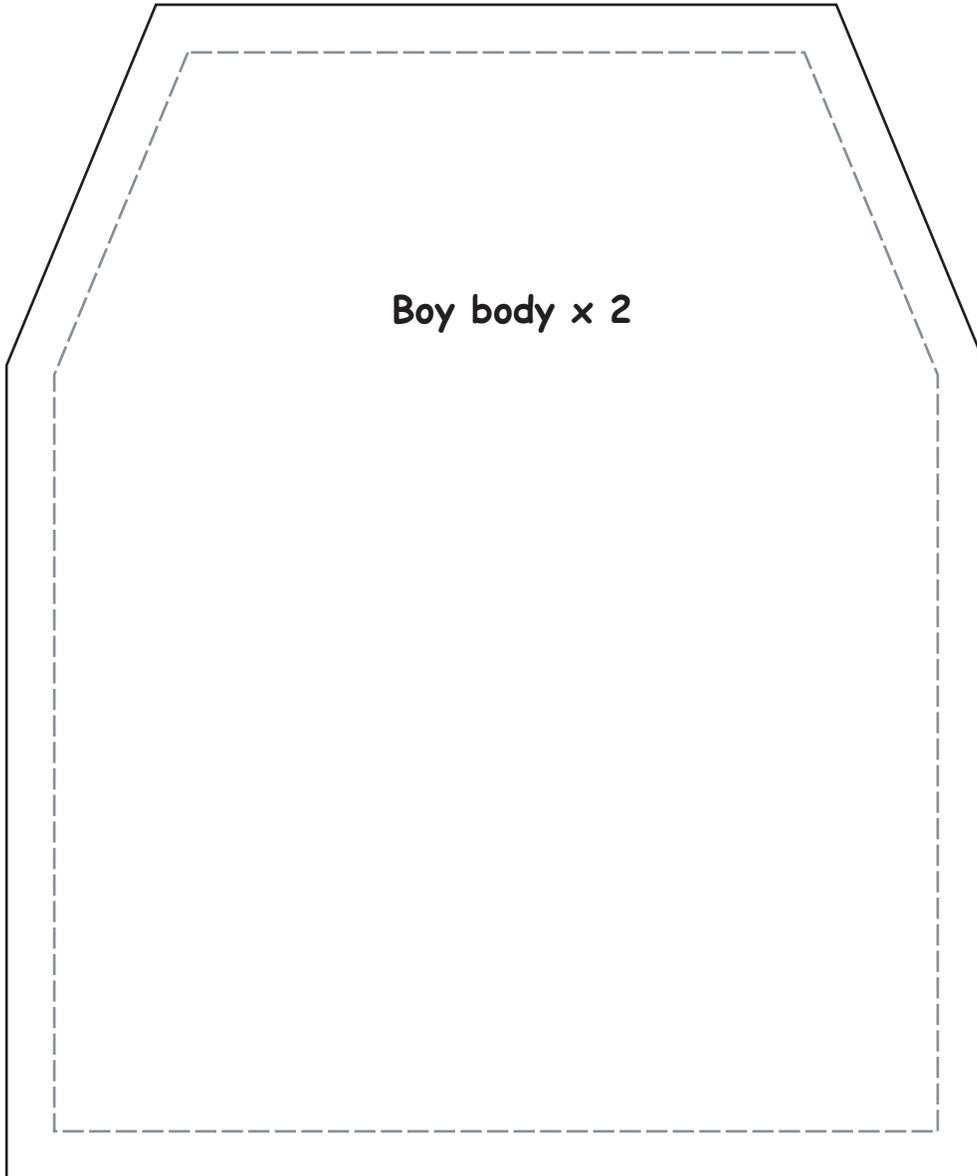


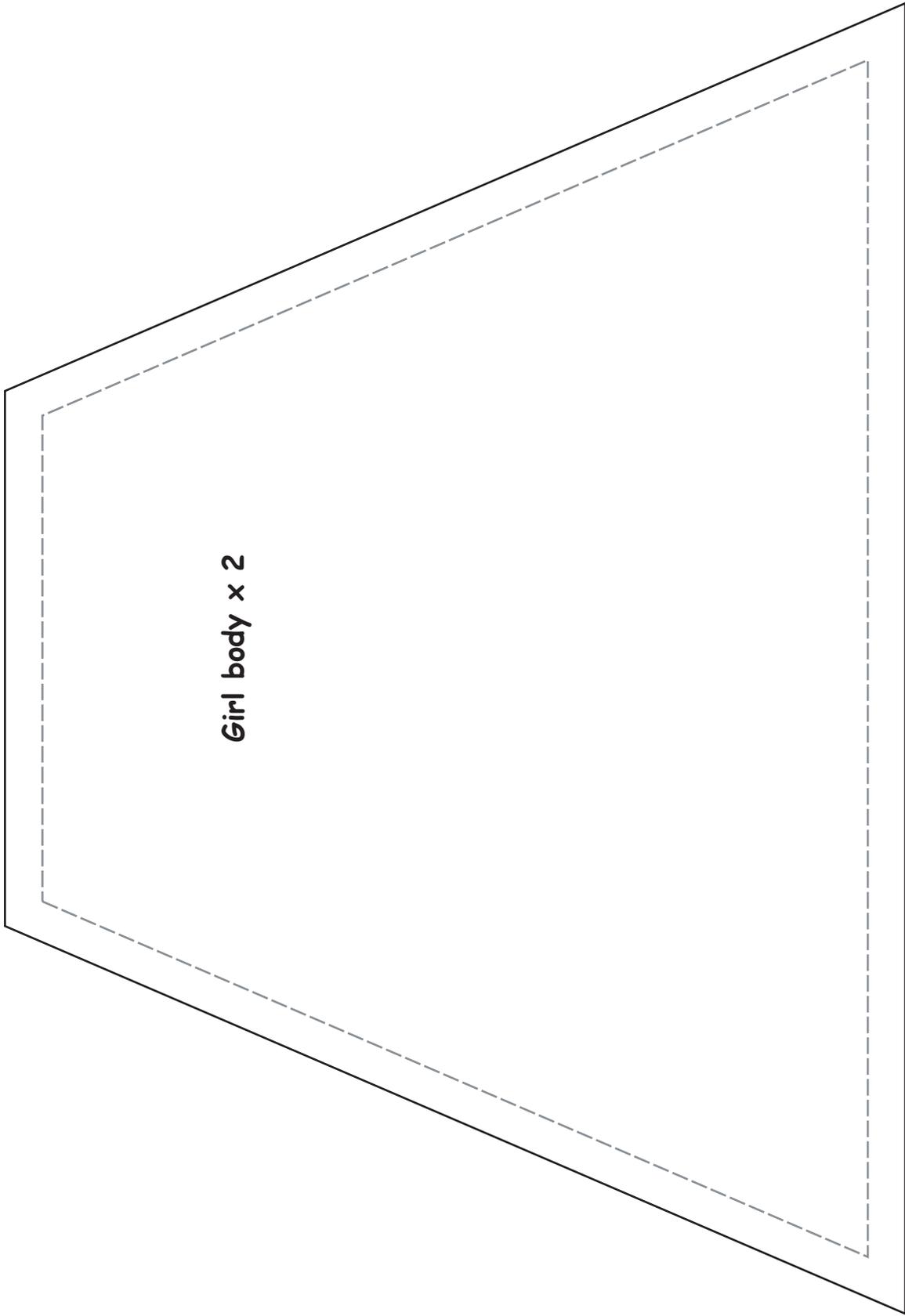
Surprise

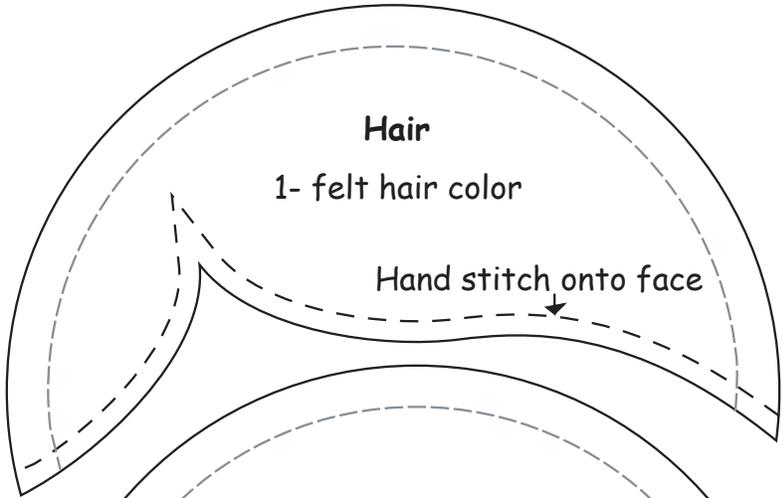
Appendix E - Doll Patterns

Modified from:

<http://dollydonations.blogspot.com/2010/01/dolly-donations-rag-dolly-tutorial-free.html>



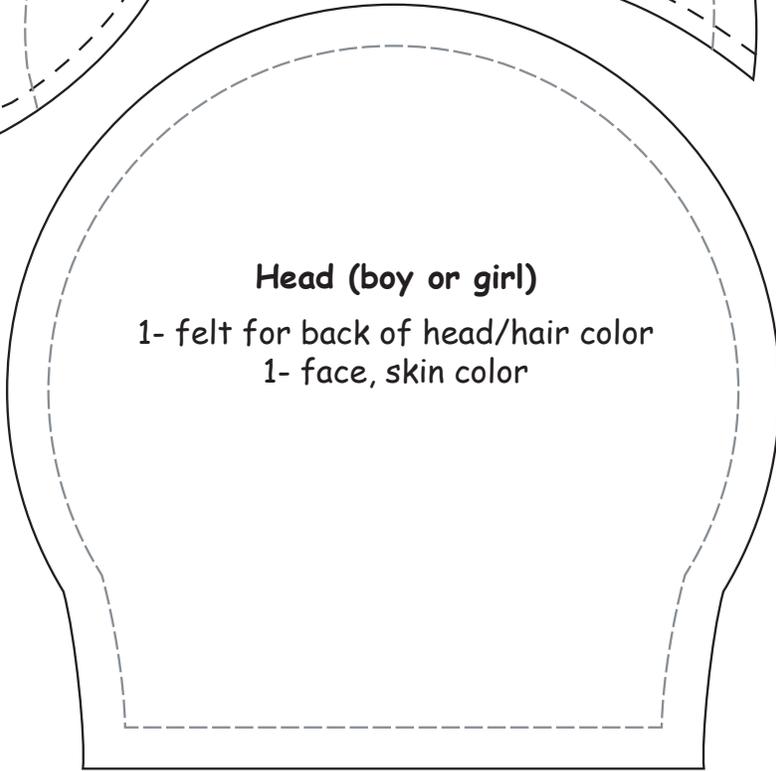




Hair

1- felt hair color

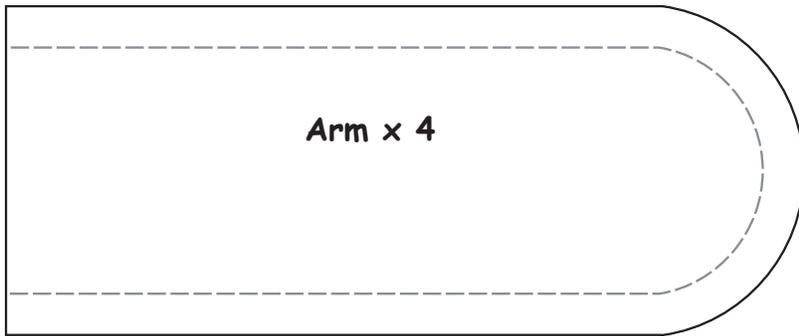
Hand stitch onto face



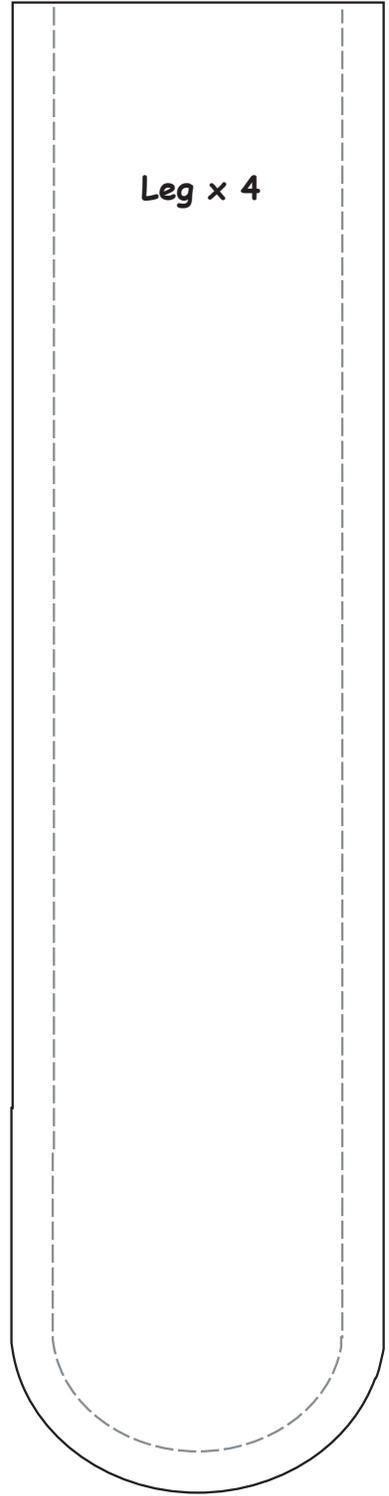
Head (boy or girl)

1- felt for back of head/hair color

1- face, skin color



Arm x 4



Leg x 4