

Evaluation of Lincoln Public Schools’ Wonderwise Sleepovers:

**Brief summary and compilation of five individual reports,
with example questionnaires**

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Reports from March 1998 – September 1999

Wonderwise Learning Kits

**Funded by the Howard Hughes Medical Institute
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Evaluation Report



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“Stupendous Science Sleepovers”

An introductory page to the compilation of five individual evaluation reports

Prepared by Amy N. Spiegel, Ph.D.
Center for Instructional Innovation
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Using Wonderwise as the primary content and impetus, teachers from three Lincoln elementary schools organized a series of five science sleepovers for fifth and sixth grade girls. Calling them the “Stupendous Science Sleepovers,” Anne Walden, Gifted Facilitator at Rousseau Elementary received a collaborative grant from the Lincoln Public School Foundation to fund the sleepovers. She was supported in this venture by her principal, her colleagues, and staff and faculty at the University of Nebraska-Lincoln.

The five sleepovers were held between January 1998 and April 1999. Four of the sleepovers were held at Rousseau Elementary School, and one was held at the Nebraska State Museum. All fifth and sixth grade girls from Zeman, Sheridan, and Rousseau elementary schools were invited to participate in the sleepovers. It was anticipated that about 50 girls would attend each sleepover, and that altogether between 150 and 200 girls would be exposed to Wonderwise. The objectives were to increase girls’ awareness of women scientists and of the diversity of activities in which scientists engage, to increase girls’ confidence to do science, and to motivate girls to learn more science and to perceive scientific careers as attainable goals. Community participants, including volunteer educators and adults, provided supervision and help with activities.

Each sleepover followed a similar schedule that ran from 5:30 on Friday evening to 8:00 Saturday morning. They each included eating dinner and participating in a get-acquainted activity, watching the 20 minute Wonderwise video of the featured scientist for the evening, interacting with a panel of 4-5 women scientists and graduate students, and participating in two to three activities from the featured Wonderwise kit. The activities were conducted as small group activities.

Brief evaluation surveys were administered to the participants at the end of the evening’s activities. Both adult and child participants were asked to provide feedback on the kits and the sleepover experience.

Evaluation of the Wonderwise Sleepover #1: Parasite Sleuth
Lincoln Public Schools
January 16, 1998

Report prepared by Amy N. Spiegel, Ph.D.
Center for Instructional Innovation
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The first Wonderwise Sleepover conducted by LPS took place January 16, 1998. Forty-eight students from Rousseau, Zeman and Sheridan elementary schools participated (see table below).

School	Fifth graders	Sixth graders	Total students
Rousseau	24	6	30
Zeman	2	4	6
Sheridan	4	8	12
Total	30	18	48

Each student participated in three activities from the Parasite Detective kit, with about the same number of students participating in each of the different activities. After their participation, students were asked to complete a two page survey to describe their reaction and opinions about the Wonderwise activities (see attached survey). Forty-seven students completed the survey.

Overall, students appeared to enjoy their sleepover experience very much, and they provided some specific information about what they liked best.

When asked what the best part of the sleepover was, the most frequent response (25%) was “everything,” with another 17% of students identifying the activities in general. Students also gave more specific responses, with about 17% of students citing “dissecting the worms” as the best part, about 17% naming aspects of the sleepover outside of the kits, such as “the ice cream” or “free time,” and another 9% cited “combing the cats for fleas.” A few students also mentioned that meeting and learning about women scientists was the best part.

When asked what the worst part of the sleepover was, the most frequent response by far (47%) was “nothing.” Nineteen percent of students cited aspects of the sleepover irrelevant to the kits, such as “we had punch instead of pop.” Fifteen percent of students thought that the worst part was not being able to do more or not having enough time, saying that there was “not enough time in activities.” A small number of students cited specific activities as being the worst, such as “dissecting the worms, it smelled bad.”

Students were then asked about certain parts of the Wonderwise kits. First, they were asked about the activities they participated in. When asked to select among descriptors, students overwhelmingly endorsed that the activities were “interesting” (83%) and “fun” (68%). Seventeen percent marked that the activities were “okay,” and one student indicated that they were “confusing.” No students selected the descriptors of “boring” or “stupid” to describe the activities.

When asked what the best part of the activities were, 28% of students wrote about the hands-on nature of the activities, and another 19% wrote about learning, such as “learning about things while having fun.” Ten percent of students enjoyed “working with real animals,” and another ten percent liked “dissecting the worms.” A smaller number

of students identified some other specific activities or “all of it” as the best part. Several students mentioned that they had a lot of fun doing the activities.

When asked how the activities compared to other science activities at school, 70% thought that they were better, 21% thought they were about the same, and one student thought they were worse.

Students were then asked about the video. When asked to select among descriptors, 53% of students indicated that the video was “okay,” 45% indicated that it was “interesting,” and 36% thought it was “fun.” Only one student indicated that the video was “boring,” “stupid,” and “confusing.”

When asked to compare the video to others they’ve watched in school, 55% thought it was about the same and 40% thought it was better, with no students indicating that it was worse.

When asked what they liked best about the video, students had varied responses. The most frequent response (23%) indicated that they enjoyed learning about the scientist’s job and her life, such as “it was a real scientist telling about what she really did,” and “it described her life and job and made you want to do that too.” Smaller percentages of students cited specific events in the video, such as “watching her cut up the fish,” and “the part where they showed the worm and that was in the seal’s body.” Other students said that “all of it” was the best part, or simply indicated that it was interesting.

None of the students indicated that they read the biography or used the CD-ROM.

Eight adults in attendance at the sleepover (3 teachers, 2 parents, 1 administrator, and 2 others: a veterinarian and veterinarian’s assistant who helped conduct one of the activities) also provided responses to a separate survey asking about the specific elements of the Wonderwise kit.

The adults were overwhelmingly positive about the activities, with all of them indicating that the girls were very engaged while working on the activities, although one person noted that after about 10:30pm the girls were less excited than earlier. Many respondents noted the hands-on nature of the activities as enjoyable, and that having real tools and actual fleas and ticks and live animals was important. One adult noted that the activities were fun and yet also demanded creative, high-level thinking. The large majority of respondents also indicated that the video was about right level and length for the participating students, although one adult felt that it was too long and that the girls seemed bored.

A few specific comments worth noting were “I could not believe I did not hear one girl say ‘ick’ when they dissected a worm,” and, under suggestions for change, “a dissecting microscope was brought in because the hand lenses did not show much detail for such small parasites.”

Evaluation of the Wonderwise Sleepover #2: Sea Otter Biologist
held at the
University of Nebraska State Museum on May 1, 1998

Report prepared by Amy N. Spiegel, Ph.D.
Center for Instructional Innovation
November 1998

The second Wonderwise Sleepover conducted by Lincoln Public Schools took place May 1, 1998 at the Nebraska State Museum. Students from Rousseau, Zeman, Sheridan and Pyrtle elementary schools participated in a variety of activities from the Sea Otter Biologist kit, including viewing the video and participating in three activities from the kit. In addition, there was a scientists' panel discussion and a laser light show included in the sleepover. Forty-five students completed a survey describing their opinions about their sleepover experience (see attached survey).

School	Fifth graders	Sixth graders	Total students
Rousseau	13	13	26
Zeman	7	2	9
Sheridan	2	7	9
Pyrtle	1	0	1
Total	23	22	45

Overall, students reported enjoying their sleepover experience very much, and they provided information about the experiences they liked most and least.

When asked what the best part of the sleepover experience was, students generally wrote one or two responses. The most frequent response (27%) was “the hands-on activities” or “the workshops.” This was closely followed by the laser show (24%). Several students (18%) indicated they liked “everything,” while a similar number of students identified the otter tracking activity as their favorite. A few students mentioned aspects outside the kit, such as sleeping at the museum and the snacks. A couple students identified the panel of scientists as the best part, and a couple students identified the video.

When asked what the worst part was, 38% of the students said “nothing,” that there was no part that they did not like. However, some students (20%) identified the panel as “too long” or “boring” and reported that they did not enjoy sitting for such a long time. A small number of students (7%) thought the first video was the worst part.

All of the students participated in the same three activities: *Otters in Action*, *Fragile Waters*, and *Tracking Otters*. When asked to select among descriptors, students found these activities “interesting” (76%) and “fun” (80%). Some students also selected “okay” (27%) to describe the activities, while a small number thought they were “boring” (4%) or “confusing” (2%). None of the students selected “stupid” to describe the activities.

When asked what they liked best about the activities, 36% of the students wrote that they liked the “hands-on” nature of the activities, and 24% wrote that they liked “everything” about the activities. Comments included, “They were mostly hands-on things, which I love very much,” and “I liked all the hands-on stuff.” A few students wrote that the activities were fun (7%), and that they liked learning about the otters (7%),

“we got to learn a lot about sea otters that I never knew.” Individual students also mentioned enjoying playing games, working in a group, and moving around.

When asked how they would describe the video to a friend, students chose among listed descriptors. The video was not as well-received as the activities, with 60% of students describing it as “okay,” 44% describing it as “interesting,” and 36% describing it as “fun.” A small number of students thought the video was “boring” (9%) and “stupid” (2%). When asked how the video compared to other videos they have watched in school, 62% thought it was about the same, 27% thought it was better, and 4% thought it was worse.

Students were then asked to write what they liked best about the video. By far the most common response (64%) was that they enjoyed “watching the otters play” or the “cute pictures of the otters.” Some students wrote that they enjoyed seeing the scientists interviewed and liked that it was a “real person” (9%), and other students wrote that they enjoyed learning something specific from the video, such as “how people do things with otters,” or “how things work” (7%). A few students liked “everything” about the video (7%), and a few others made general positive comments, such as it was “interesting.”

Finally, students were asked about the biography. Only a small number of students had an opportunity to be exposed to the biography, with just 16% reporting that they had read it. Of these seven students, four thought the biography was “interesting,” three thought it was “fun” and “okay,” and one thought it was “boring.”

Ten of the supervising adults, including three teachers, two assistant teachers, and two parents, also completed evaluation forms and provided their input about the kits (see attached survey). All of these adults thought the video was “about right” in its complexity and “about the right length” for the students at the sleepover. They also all agreed that the activities were about the right complexity. Eight of the ten observed the students to be “very engaged” in the activities they participated in. One teacher thought the students were “somewhat engaged,” and one parent thought about half the group was “very engaged” and half the group was “somewhat engaged.”

While one teacher observed the students to be “a little bored” while watching the video, the other participating adults indicated that they observed the students to be “positive,” and “interested” in the video and that it “held their attention.” When asked to provide specific comments about the activities, these participating adults cited a variety of factors that made the activities appealing to them. One parent noted that teacher enthusiasm was a positive and major factor contributing to the activities’ success. This parent also noted that the variety of activities kept students thinking, and that the student booklets enabled students to see the sequence of activities, focus their thoughts, and use scientific processes. Those who participated in the *Otters in Action* activity found it very interesting, enjoyed watching the otters in the “excellent” video, and thought the student book was good. The *Fragile Waters* participants liked the hands-on nature of the activity, and one parent remarked that it “needs a good teacher to keep kids focused. I observed and helped a very good one.” Those who participated in the *Tracking Otters* activity commented that they liked the movement and the hands-on nature of the activity. They observed that the students enjoyed the activity, and that it kept them thinking and resulted in some good observations and insights by the students. One teacher particularly appreciated how closely this activity simulated scientists work.

When asked what they would change about the activities, there were only a few comments. One participant suggested shortening the workshops by about 15 minutes each. The other comments were specific to the activities. For *Tracking Otters*, there were two comments, both suggesting that students create the islands for this activity themselves rather than having the teacher do it ahead of time. For the *Fragile Waters* activity, there were two suggestions proposed by both a parent and a teacher. They suggested having four sets of objects so that students could test the different cleaning techniques, “test cold, warm, cold with dawn, and warm with dawn separately.” In addition, they suggested addressing disposal issues with the oil, such as including a “more biodegradable” oil like olive oil.

Only two of the adults indicated they had used the biography with the students, and one wrote that it “depended on time constraints.” When asked whether the complexity level was on target for this age group, one adult indicated that it was about right in complexity. The other commented that “some paraphrasing” was needed. When asked about the length, one thought it was about the right length and the other thought it was too long.

Evaluation of the Wonderwise Sleepover #3: Pollen Detective
held at the
University of Nebraska State Museum on October 21, 1998

Report prepared by Amy N. Spiegel, Ph.D.
Center for Instructional Innovation
December 1998

The third Wonderwise Sleepover conducted by Lincoln Public Schools took place October 21, 1998 at the Nebraska State Museum. Students from Rousseau, Zeman, and Sheridan elementary schools and Irving middle school participated in a variety of activities from the Pollen Detective kit, including viewing the video and participating in three activities from the kit. In addition, there was a scientists' panel discussion and a laser light show included in the sleepover. Ninety-five students completed a survey describing their opinions about their sleepover experience (see attached survey).

School	Fifth graders	Sixth graders	Seventh graders	Total students
Rousseau	33	23	0	56
Zeman	18	0	0	18
Sheridan	8	11	0	19
Irving	0	0	1	1
(missing)	0	1	0	1
Total	59	35	1	95

When asked what the best part of the sleepover experience was, most students wrote a single activity, but many students wrote down two or more things. The event named most often (39%) was “the laser light show.” This was followed by the *Pollen Tracks* activity (29%) which entailed “digging up fossils,” and “finding flower pollen in the rocks.” The dissection of a flower (*In Search of Pollen*) was also frequently mentioned (15%), and some students thought “all of it” was the best part (11%). A smaller number of students indicated that their favorite part was the snack (6%), the activities as a group (6%), or the panelists (5%).

When asked what the worst part was, 29% of the students said “nothing,” that there was no part that they did not like. However, 23% of the students identified the video as the worst part. A smaller number of students identified specific activities as the worst part, with 5% naming *Medical Mystery*, 3% citing *In Search of Pollen*, and 3% citing *Pollen Tracks*. Five percent also didn't like that they weren't paired up with their friends during the activities.

All the students participated in the same three activities: *Medical Mystery*, *In Search of Pollen*, and *Pollen Tracks*. When asked to select among descriptors, students found these activities “fun” (81%) and “interesting” (63%). Some students also selected “okay” (17%) to describe the activities, while a small number thought they were “boring” (2%) or “confusing” (2%). None of the students selected “stupid” to describe the activities.

When asked what they liked best about the activities, 27% of students again mentioned the *Pollen Tracks* activity, while 16% mentioned the *In Search of Pollen* activity, and 21% talked more generally about the “hands-on” nature of the activities as a

whole. Comments about the best part of the activities included, “being able to touch and do things and dig up the beads,” “finding rocks and taking them apart,” and “when we got to cut open the flowers and got to dissect the rocks.” Students also mentioned that the activities were fun (15%), interesting (9%), and that they liked learning (6%) and being with friends (4%).

When asked how they would describe the video to a friend, students chose among listed descriptors. The video was not as well-received as the activities, with 53% of students describing it as “okay,” 32% describing it as “interesting,” and 22% describing it as “boring.” A smaller number of students thought the video was “fun” (13%), “stupid” (6%), and “confusing” (3%). When asked how the video compared to other videos they have watched in school, 62% thought it was about the same, 18% thought it was worse, and 17% thought it was better.

Students were then asked to write what they liked best about the video. While a considerable number of students (19%), couldn’t find anything they liked best, saying they “didn’t enjoy it,” many students identified particular scenes in the video that they found interesting. Many students enjoyed watching the featured scientist at work, “seeing where Peg Bolick finds the pollen she studies,” and “when it showed her showing how pollen could be a fossil.” About 21% of students mentioned scenarios like this, particularly focusing on digging up fossilized pollen. Some students liked learning interesting facts from the video or “everything” about the video (12%), while others liked seeing the actual pollen (4%) and the flowers (4%). A small number of students liked the scenes that showed Dr. Bolick in the lab (3%) or outside (3%). A few students mentioned that they liked that it was a real life scientist (3%), and a girl (2%) from Nebraska (2%).

Twelve of the supervising adults, including five teachers, three parents, an assistant teacher, a counselor, an administrator and a “group leader,” also completed evaluation forms and provided their input about the kits (see attached survey). Only half of the adults viewed the video, and all of them agreed that it was “about right” in its complexity and “about the right length” for the students at the sleepover. All twelve of the adults participated in the activities with the students, and all thought that the activities were about the right complexity (although one teacher thought *Medical Mystery* may have been a bit simplistic), and all thought the students were “very engaged” in the activities they participated in.

The adults working with the *In Search of Pollen* activity noted that many girls commented about how “fun” the dissection was and that the girls “seemed to really enjoy this activity.” They handled the dissecting needles well and enjoyed “doing the same thing that botanists do.” The adults involved in the *Medical Mystery* activity thought that the girls found the role-playing fun and interesting, but one teacher thought it could have been more challenging. Those involved in the *Pollen Tracks* thought it was a “great simulation,” and that the “kids loved digging for pollen.” One teacher was surprised by the girls’ enthusiasm and high level of interest, as she watched the students become “excited scientists.” The adults liked the hands-on nature of the activity and the clear directions in the booklet. For those adults who participated in all three activities, they observed high student interest in the activities, and particularly liked the overall hands-on nature of the activities.

When asked what they would change about the activities, there were only two comments. One teacher noted that while she would not change the *In Search of Pollen* activity, she had modified it by adding additional information about the flower parts, such as the petals attracting insects to help with pollination. Another adult felt that the *Medical Mystery* activity was a little short and needed a little extra, and suggested perhaps a scavenger hunt of the room they are in.

Evaluation of the Wonderwise Sleepover #4: African Explorer
held at
Zeman Elementary School on January 22, 1999
Lincoln Public Schools

Report prepared by Amy N. Spiegel, Ph.D.
Center for Instructional Innovation
March 1999

The fourth Wonderwise Sleepover conducted by Lincoln Public Schools took place January 22, 1999. Students from Rousseau, Zeman, and Sheridan elementary schools participated in a variety of activities from the African Explorer kit, including viewing the video and participating in three activities from the kit. In addition, there was a scientists' panel discussion, a folksinger and a storyteller included in the sleepover (see attached schedule). Fifty-seven students completed a survey describing their opinions about their sleepover experience (see attached survey). The percentages used below to describe student responses do not always add to 100% because not all the students answered all the questions on the survey.

School	Fifth graders	Sixth graders	Total students
Rousseau	15	11	26
Zeman	18	7	25
Sheridan	4	2	6
Total	37	20	57

When asked what the best part of the sleepover experience was, most students named one activity, although 14% wrote "all" and 9% liked the all the "activities" best. By far the most popular single activity (47%) was "the African art activity," or "dyeing the cloths." This was followed by the session with the folksinger and storyteller, identified by 14% as the best part of the sleepover. A small number of students (fewer than 5%) wrote that they liked meeting the scientists best.

When asked what the worst part was, 33% of the students said "nothing," that there was no part that they did not like, and another 37% said that going to sleep, getting up, or going home was the worst part. A small number of students identified specific aspects as the worst part, with 9% indicating that chewing the crackers for the starch experiment (*Investigating Starch*) was the worst part. Another 4% named the movie as the worst part, and single students named the *Everyday Poisons* and the *African Art Activity* as the worst aspects of the sleepover.

All the students participated in the same three activities: *African Arts*, *Everyday Poisons*, and *Investigating Starch*. When asked to select among descriptors, students found these activities "fun" (72%) and "interesting" (56%). Some students (21%) also selected "okay" to describe the activities, while a single student thought they were "boring." None of the students selected "confusing" or "stupid" to describe the activities. When asked how the sleepover activities compared to science activities they had done in school, 53% thought they were better, and 42% thought they were about the same. One student thought they were worse.

When asked what they liked best about the activities, 21% of the students mentioned the "hands-on" nature of the activities, while another 19% thought they were

“fun.” A number of students (14%) specifically mentioned enjoying learning from the activities, with comments such as “I learned a lot of things about poisons in foods like casava, apples, potatoes, etc.” and “you can learn from them [the activities] and they are fun.” Some students also mentioned some specific activities, such as using iodine in the starch experiment (9%) or dyeing the fabric (14%) as the best aspects of the activities. Other comments, made by one or two students each, included enjoying the activities because they were new, interesting, easy, about nutrition or food, or because they got to be with friends.

To assess students’ reactions to the video, they were asked to choose among listed descriptors. The video was not as well-received as the activities, with 37% of students describing it as “okay” and “interesting.” A smaller number of students thought the video was “fun” (16%), “boring” (7%), or “stupid” (4%). When asked how the video compared to other videos they have watched in school, 46% thought it was about the same, 21% thought it was better, and 4% thought it was worse. Several students did not answer this question and at least some of those students indicated that they did not see videos at schools, so they did not have anything with which compare the African Plant Explorer video.

Students were then asked to write what they liked best about the video. The most common comments involved learning (25%), such as “when we learned about the plants,” and “learning about cassava.” Other students (9%) enjoyed “all” of the video, while a similar number thought it was “interesting.” Individual students identified specific scenes they enjoyed, such as the “part about the mosquitoes,” “learning about poisons” and scenes with Fatima helping the farmers and working in her lab.

Seventeen of the supervising adults, including five teachers, six parents, two teen assistants, an assistant teacher, a counselor, and two administrators, also completed evaluation forms and provided their input about the kits (see attached survey). Half of these adults viewed the video, and all of them agreed that it was “about right” in its complexity and “about the right length” for the students at the sleepover. They indicated that the video was used as an introduction to the activities, and that the video was discussed as part of the hands-on activities. A few of the adults thought that the presentation of the video could have been improved, since it was on a TV in the cafeteria while the pizza was being delivered and the students were distracted. One parent felt that not all of the girls could see or hear the video well. However, other adults noted that in their discussions with the students, they appeared to have a strong understanding of the video’s content and indicated their interest by asking for more information about topics presented in the video.

All fifteen of the adults participated in the activities with the students, and all but one thought that the activities were about the right complexity (one teacher thought *Everyday Poisons* may have been a bit simplistic). Most of the adults thought the students were “very engaged” in the activities, although three indicated that students were “somewhat engaged.”

The adults working with the *Everyday Poisons* activity rated the students as “somewhat” to “very engaged” in this activity. Their comments were positive, noting that “students were surprised that common foods can be poisonous.” Two adults were particularly taken with the fact that students were “discovering new and interesting scientific facts in familiar, everyday things.”

The adults working with the *Investigating Starch* activity appreciated the hands-on nature of the activity and the everyday materials that were used. A few teachers noted the novelty of the activity. One wrote, “The activities were new to most of the students. I believe this was the reason most of the students were so excited to take part in the activities.” They thought the students enjoyed the activity, were interested, and were all able to participate and be successful.

The adults also liked the *African Arts* activity, which started off the evening and was conducted in two sessions. Wrote one, “I thought it was an interesting activity and tied in well to the African plant life.” A few noted the interesting patterns and raw materials as well as the clear instructions.

One parent who participated in all the activities liked that each of the activities “was so different, yet went together nicely to deepen the overall understanding. The hands-on activities were fun, and I was amazed at the deep interest and understanding of the girls throughout the night.”

When asked what they would change about the activities, there were only a few suggestions. Several adults felt that nothing should be changed, with one noting, “everything is so well thought out and organized.” The comments that were offered primarily focused on expanding the activities. For example, one teacher felt that the *Everyday Poisons* activity could be more hands-on, and suggested making a “recipe of the ingredients mentioned,” which could then “be used as some of the snacks?” To expand the *African Arts* activity with the cassava gel, one teacher thought it would be interesting to demonstrate how the cassava gel was made, while a participating parent thought that perhaps cooking and eating cassava would be instructive since it seemed to be a new food to the students.

In their comments, a few of the adults noted that the activities provided interesting learning experiences for both the children and the participating adults.

Evaluation of the Wonderwise Sleepover #5: Rainforest Ecologist
held on April 23, 1999
Lincoln Public Schools

Report prepared by Amy N. Spiegel, Ph.D.
Center for Instructional Innovation
September 1999

The fifth and final Wonderwise Sleepover conducted by Lincoln Public Schools took place April 23, 1999. Students from Rousseau, Zeman, and Sheridan elementary schools worked with the Rainforest Ecologist kit, including viewing the video and participating in different hands-on activities from the kit. In addition, a scientists' panel discussion was also included. Fifty-five students completed a survey describing their opinions about their sleepover experience (see attached survey).

School	Fifth graders	Sixth graders	Total students
Rousseau	17	13	30
Zeman	15	2	17
Sheridan	2	4	6
Total	34	19	53*

* two students did not provide school or grade information.

When asked what the best part of the sleepover experience was, 33% of the students liked being with their friends or eating the food provided. Fifteen percent liked "all of it," and 9% liked all of the "workshops" best. Twenty percent named "making the rainforest" (*Rainforest in Your Room*) as the best part, while smaller numbers specifically named nutcracking (*Nutty Investigations*), building a tree (*Build a Tree*), camouflaging the frog (*Frogs Up Close and Personal*), or watching the video. Three students felt that the panelists were the best part, while four students thought that learning about the rainforest was the best part.

When asked what the worst part was, 24% of the students said "nothing," that there was no part that they did not like, and another 45% said that going to sleep or getting up was the worst part. Some students identified specific aspects as the worst part, with 13% indicating that the nutshell game (*Life in a Nutshell Game*) was the worst part. Another 7% named the video as the worst part, and single students named a few other things such as writing and cracking nuts (*Nutty Investigations*) as the worst aspects of the sleepover.

All the students indicated they participated in at least three activities, with many indicating participating in four or even five of the following activities: *Nutty Investigations*, *Frogs Up Close and Personal*, *Build a Tree*, *Rainforest in Your Room*, and *Life in a Nutshell Game*. When asked to select among descriptors, students found these activities "fun" (69%) and "interesting" (51%). Some students (16%) also selected "okay" to describe the activities, while a single student thought they were "stupid." None of the students selected "confusing" or "boring" to describe the activities. When asked how the sleepover activities compared to science activities they had done in school, 55% thought they were better, and 42% thought they were about the same. One student thought they were worse.

When asked what they liked best about the activities, 25% of the students thought they were “fun” and 15% liked the “hands-on” nature of the activities, while another 15% enjoyed learning new things. Nine percent of the girls liked that they did the activities with friends, and 5% liked that the activities allowed them to be creative. Comments included, “they were fun and they helped us learn something,” and “[I liked] learning about the animals and how they live in the nutshells.”

To assess students’ reactions to the video, they were asked to choose among listed descriptors. The video was not as well-received as the activities, with 40% of students describing it as “interesting.” Thirty-six percent thought it was “okay,” while 18% thought it was fun and 9% thought it was boring. None of the students indicated that they thought the video was “stupid” or “confusing.” When asked how the video compared to other videos they have watched in school, 55% thought it was about the same, 35% thought it was better, and 2% thought it was worse.

Students were then asked to write what they liked best about the video. Half of the students mentioned enjoying seeing the frogs. Comments included, “The frogs were really interesting how they looked and all about them,” and “[I liked seeing] the frogs up close.” Twenty-nine percent of the students liked the information they got from the video, especially about Jana Caldwell, the scientist. Students liked “learning about what Mrs. Caldwell did,” and how “it showed how she did her research.” One student liked “how it showed a role model.” A small number of students (7%) also enjoyed learning about “the life in the brazil nut pod.”

Six of the supervising adults, including four teachers, one parent, and one assistant teacher also completed evaluation forms and provided their input about the kits (see attached survey). All of them agreed that the video was “about right” in its complexity and “about the right length” for the students at the sleepover. They indicated that the video was used as an introduction to the activities, and that the video led to discussions during the hands-on activities. While most of the adults thought that the students found the video interesting, one felt that the students had a “mixed reaction” while another thought “they loved it!”

All of the adults were active participants in the activities with the students, and all thought that the activities were about the right complexity for the student age group. All of the adults found the students to be “very engaged” in the activities, with comments such as “This was an excellent session. Neat activities and information.” “Kids really enjoyed them – took right off with them and right at their level.” The adults found the high-interest material and hands-on aspect of the activities to be most appealing. As one adult noted, “They were high interest – allowed for creativity. Students had a goal – needed an end product but the actual activity was unstructured and the feeling during the activity was relaxed.”

The biography and CD-ROM were not included as part of the sleepover activities.