

**Buzz Lightyear Returns From the International Space Station**  
**Buzz on ISS – Kids in Micro-g! Challenge**

**Questions From / Answers To Potential Contest Entrants**

Most Current Update: [Thurssday, January 14, 2010](#)

Question Number	Date Received	Date Posted	Question	Answer
1	Thurs 15 Oct 2009	Tues 20 Oct 2009	I was wondering if home schooled students will be able to enter the challenge.	Yes – Home School students are welcome to participate.
2	Thurs 15 Oct 2009	Tues 20 Oct 2009	It says that there is a flashlight on the supplies list but no batteries so I was wondering if there were batteries inside the flashlight I could use for my lab experiment?	Yes, the crew can install batteries on orbit, and so the flashlights do have batteries in them.
3	Thurs 15 Oct 2009	Tues 20 Oct 2009	Would it be possible to say fill a zip-lock bag with something prior to take-off and seeing the reaction up in space?	No, we regret we cannot launch a bag of something and see the reaction in space.
4	Thurs 15 Oct 2009	Mon 25 Oct 2009	I know that there is no water on the supply list but I was wondering if you were going to add it in November.	Yes, both hot and cold water are available.
5	Thurs 15 Oct 2009	Tues 20 Oct 2009	Is the flashlight powered by batteries or by solar power?	The flashlights are battery-powered.
6	Thurs 15 Oct 2009	Tues 20 Oct 2009	What kind of packing foam is available?	The packing foam is MINICEL L200 cross linked polyethylene foam. A typical sheet is 3-in thick and 48-in square.

Question Number	Date Received	Date Posted	Question	Answer
7	Thurs 15 Oct 2009	Tues 29 Dec 2009	Are you allowed to have batteries in a flashlight, or does the flashlight have to be solar powered?	The flashlights are battery-powered.
8	Thurs 15 Oct 2009	Tues 20 Oct 2009	I was wondering if we could submit multiple entries?	Yes, classes may submit multiple entries.
9	Thurs 15 Oct 2009	Tues 20 Oct 2009	Would it be possible to melt a pair of scissors or a paperclip in space using a magnifying glass? Or would this be impossible?	No, melting a pair of scissors or a paperclip in space using a magnifying glass would not be permitted for <i>Kids in Micro-g!</i> experiments conducted aboard the International Space Station (ISS). The only combustion allowed to take place on board ISS is in carefully controlled experiment racks.

Question Number	Date Received	Date Posted	Question	Answer
10	Thurs 15 Oct 2009	Tues 20 Oct 2009	<p>I was wondering if you could add salt to the materials list because you don't have a powdery substance and I found a chemical reaction using ketchup and salt.</p> <p>How much of the condiments will there be?</p>	<p>There is liquid salt available on board the International Space Station, but powdery or granular substances are restricted because they can get free in the air.</p> <p>The amount of condiments available depends on what the student(s) want to use it for and how much. Condiments are sent up at the crew's discretion, so the condiments that are on board right now are not necessarily the same as what will be up there when the experiments are performed, because again, each crew picks out their own.</p> <p>If the students who want to use condiments can give us an idea of what they want to use and how much, this issue can be checked with and discussed with the Astronaut Crew Office about getting requests included.</p>
11	Thurs 15 Oct 2009	Tues 20 Oct 2009	I was wondering, will water be added to the available materials list? It would be very helpful!	Yes, both hot and cold water are available.
12	Thurs 15 Oct 2009	Tues 29 Dec 2009	Is it possible for anything to be added to the list of supplies? I'm interested in using magnets, but if this is not possible I understand completely.	<p>No magnets are available. The only supplies available for use are those contained in the full list at <a href="http://www.nasa.gov/mission_pages/station/science/nlab/experimentchallenge.html">http://www.nasa.gov/mission_pages/station/science/nlab/experimentchallenge.html</a></p>

Question Number	Date Received	Date Posted	Question	Answer
13	Tue 10 Nov 2009	Thu 12 Nov 2009	Hi, I was wondering that in the project Kids In Micro-G that if you are allowed to work with other people also saying if you can have a partner on it.	The intent is that the students will work in groups, lead by their teacher or educator. The teacher/educator will be the person responsible for submitting proposals on the behalf of the student groups. These details are covered in the submission instructions posted at the <i>Kids in Micro-g!</i> Web site at <a href="http://www.nasa.gov/mission_pages/station/science/nlab/experimentchallenge.html">http://www.nasa.gov/mission_pages/station/science/nlab/experimentchallenge.html</a>
14	Wed 18 Nov 2009	Wed 18 Nov 2009	I just wanted to confirm the age limit. I currently 14 and in year 8. In 2010 I will go into year 9. Am I allowed to participate in this competition? Also I don't live in America, so am I allowed to participate?	The <i>Kids In-Micro-g!</i> contest is only open to grades 5-8 in the United States. NASA is currently considering a contest for the next school year that could involve students from other countries, in conjunction with the international space agencies participating in the International Space Station program. There will also be additional opportunities for similar participation for grades 9-12 as well as university level students. Please continue to follow NASA and the ISS program for information on these future opportunities.
15	Thu 19 Nov 2009	Mon 23 Dec 2009	I have several students who have started their Kids In Micro G experiment designs and I could like to give them some more info on deadlines, final item lists and all. When will that be released?	The information you are seeking is posted to the <i>Kids in Micro-g!</i> Web site at <a href="http://www.nasa.gov/mission_pages/station/science/nlab/experimentchallenge.html">http://www.nasa.gov/mission_pages/station/science/nlab/experimentchallenge.html</a> Please note, the information at this site is updated on occasion, so please check back periodically.

Question Number	Date Received	Date Posted	Question	Answer
16	Sun 22 Nov 2009	Tue 24 Nov 2009	Can homeschoolers be a part of kids in micro and is this where we send our kids in micro project?	Yes, home-schoolers in grades 5-8 course of study can participate. As with all participants, the entries must be submitted by an adult educator/teacher.
17	Sun 22 Nov 2009	Mon 23 Nov 2009	When is the deadline for this contest?	NASA will be accepting experiment proposals from Monday, January 4 through Friday, February 19, 2010. The winning proposals will be announced on Friday April 2, 2010. Instructions for experiment proposal submissions are also posted at the <i>Kids in Micro-g!</i> challenge Web site at <a href="http://www.nasa.gov/mission_pages/station/science/nlab/experimentchallenge.html">http://www.nasa.gov/mission_pages/station/science/nlab/experimentchallenge.html</a> .
18	Sun 22 Nov 2009	Mon 23 Nov 2009	Is there a list of materials that can be used located somewhere, other than included in a classroom?	The <i>Kids in Micro-g!</i> challenge Web site at <a href="http://www.nasa.gov/mission_pages/station/science/nlab/experimentchallenge.html">http://www.nasa.gov/mission_pages/station/science/nlab/experimentchallenge.html</a> is periodically being updated with additional information, including the full list of materials available for construction of the experiment. Additional video reference material will be added in December, so please continue to check back.

Question Number	Date Received	Date Posted	Question	Answer
19	Tue 24 Nov 2009	Mon 30 Nov 2009	I was wondering if Canadian students could enter the competition?	Thank you very much for your question and your interest. The <i>Kids In-Micro-g!</i> challenge is only open to grades 5-8 in the United States. NASA is currently considering a contest for the next school year that could involve students from other countries, in conjunction with the international space agencies participating in the International Space Station program. There will also be additional opportunities for similar participation for grades 9-12 as well as university level students. Please continue to follow NASA and the ISS program for information on these future opportunities.
20	Tue 24 Nov 2009	Fri 4 Dec 2009	Are there any such zero-g challenges/possibilities for grade 2 students?	The determination of grade level for student participation in <i>Kids In Micro-g!</i> was based on a review of standards for science curriculum content at primary grade levels. From this review, it was determined that grades 5-8 would be the optimum grade levels to introduce students to microgravity concepts.

Question Number	Date Received	Date Posted	Question	Answer
21	Tue 24 Nov 2009	Mon 30 Nov 2009	I'm an amateur astronomer/ astronomy educator from Sri Lanka. I just came across the "Kids In-Micro-g! Student Experiment Design Challenge", which is very interesting. Is it only open for US citizens? or it's open for kids around the world?	The <i>Kids In-Micro-g!</i> challenge is only open to grades 5-8 in the United States. NASA is currently considering a contest for the next school year that could involve students from other countries, in conjunction with the international space agencies participating in the International Space Station program. There will also be additional opportunities for similar participation for grades 9-12 as well as university level students. Please continue to follow NASA and the ISS program for information on these future opportunities.
22	Wed 25 Nov 2009	Mon 30 Nov 2009	I read on your web site that you offer a student experiment design challenge named "Kids in Micro-g!". I'd like to inquire about if it's possible to participate from Spain.	The <i>Kids In-Micro-g!</i> challenge is only open to grades 5-8 in the United States. NASA is currently considering a contest for the next school year that could involve students from other countries, in conjunction with the international space agencies participating in the International Space Station program. There will also be additional opportunities for similar participation for grades 9-12 as well as university level students. Please continue to follow NASA and the ISS program for information on these future opportunities.

Question Number	Date Received	Date Posted	Question	Answer
23	Wed 25 Nov 2009	Mon 30 Nov 2009	Can high school students participate and submit proposals?	This particular <i>Kids In-Micro-g!</i> challenge is only open to grades 5-8 in the United States. NASA is currently considering a contest for the next school year that could involve students from other countries, in conjunction with the international space agencies participating in the International Space Station program. There will also be additional opportunities for similar participation for grades 9-12 as well as university level students. Please continue to follow NASA and the ISS program for information on these future opportunities.
24	Sat 28 Nov 2009	Mon 30 Nov 2009	Is your contest re: classroom experiment also to be done on the space station open to Canadian classrooms?	The <i>Kids In-Micro-g!</i> challenge is only open to grades 5-8 in the United States. NASA is currently considering a contest for the next school year that could involve students from other countries, in conjunction with the international space agencies participating in the International Space Station program. There will also be additional opportunities for similar participation for grades 9-12 as well as university level students. Please continue to follow NASA and the ISS program for information on these future opportunities.

Question Number	Date Received	Date Posted	Question	Answer
25	Sat 28 Nov 2009	Mon 30 Nov 2009	I live in Brazil and would like to know if I can enter an experiment into "Kids in Micro-g!". I asked @NASA in Twitter, but unfortunately, they didn't know, so they gave me this e-mail to ask.	The <i>Kids In-Micro-g!</i> challenge is only open to grades 5-8 in the United States. NASA is currently considering a contest for the next school year that could involve students from other countries, in conjunction with the international space agencies participating in the International Space Station program. There will also be additional opportunities for similar participation for grades 9-12 as well as university level students. Please continue to follow NASA and the ISS program for information on these future opportunities.
26	Tue 1 Dec 2009	Thu 10 Dec 2009	Are the condiments in bottles or in small sealed packets?	The condiments are in individual packets.
27	Tue 1 Dec 2009	Thu 10 Dec 2009	What kind of packing foam is available....packing peanuts or Styrofoam? If Styrofoam, what thickness?	Here are the specs on the foam: MINICEL L200 cross linked polyethylene foam, natural (White) color for ISS packing cushion. 3" x 48" x 48" (sheet).
28	Tue 1 Dec 2009	Thu 10 Dec 2009	What size are the rubber bands?	The rubber bands are the standard size used for office supply.
29	Tue 1 Dec 2009	Thu 10 Dec 2009	What is Nomex cord? What is a Nomex blue backdrop with grid?	Nomex is a strongly fire-resistant fabric and it's used in bungee cords, string, and the gridded backdrop. The backdrop is nothing more than a flat panel of Nomex.

Question Number	Date Received	Date Posted	Question	Answer
30	Thu 3 Dec 2009	Tue 28 Dec 2009	Where can I find information on the kinds of experiments students have sent on the Space Stations in the past? I found some references to some experiments, but no details about them.	<p>One area similar to what we are doing here is the DIME &amp; WING program at NASA/Glenn Research Center. DIME &amp; WING stands for "Dropping In a Microgravity Environment - What If No Gravity?" Information on the experiments being conducted through the DIME &amp; WING program is located at <a href="http://spaceflight systems.grc.nasa.gov/DIME.html">http://spaceflight systems.grc.nasa.gov/DIME.html</a>.</p> <p>It is also recommended to look at information regarding the Education Payload Operation-Demonstrations (EPO-Demos) experiments being conducted, which you can find at <a href="http://www.nasa.gov/mission_pages/station/science/experiments/EPO-Demos.html">http://www.nasa.gov/mission_pages/station/science/experiments/EPO-Demos.html</a>, as well as what is described at the <i>Teaching From Space</i> website at <a href="http://www.nasa.gov/audience/foreducators/teachingfromspace/home/index.html">http://www.nasa.gov/audience/foreducators/teachingfromspace/home/index.html</a>.</p> <p>The Reduced Gravity Flight Program here at NASA/JSC is geared towards college students and is very technical, however, if you wish to learn more, please see <a href="http://microgravityuniversity.jsc.nasa.gov/">http://microgravityuniversity.jsc.nasa.gov/</a> and <a href="http://microgravityuniversity.jsc.nasa.gov/se/">http://microgravityuniversity.jsc.nasa.gov/se/</a></p> <p>Finally, for more general information about NASA's education programs, please visit <a href="http://www.nasa.gov/education">http://www.nasa.gov/education</a>.</p>

Question Number	Date Received	Date Posted	Question	Answer
31	Tue 9 Dec 2009	Thu 10 Dec 2009	In the supplies in the condiments- oil and vinegar are not included, are they permitted?	We would be hesitant to permit anything that was not on the published list as that item(s) would be an uncontrolled variable(s) in the experiment. The goal is to make the experiments performed on-orbit as identical as possible to those on the ground.
32	Wed 9 Dec 2009	Thu 10 Dec 2009	Are the following materials available to use in the design challenge?  2 small magnet 1 large magnet popsicle sticks hot glue/glue gun 1 sheet of tissue (kleenex) 1 small plastic bowl	Only the materials that are published on the list posted at the <i>Kids in Micro-g!</i> Web site <a href="http://www.nasa.gov/mission_pages/station/science/nlab/experimentchallenge.html">http://www.nasa.gov/mission_pages/station/science/nlab/experimentchallenge.html</a> are available for use in the challenge.
33	Sun 13 Dec 2009	Wed 16 Dec 2009	What is the maximum/minimum number size of student groups for this contest?	NASA does not have a requirement for the maximum or minimum number of students in a student group. This is a decision of the educator who will ultimately be submitting the experiment proposal to us. Our desire is that the student group is of a size that will facilitate learning for all members of the group as they work on the concepts for, and design of, the experiment proposal.

Question Number	Date Received	Date Posted	Question	Answer
34	Mon 14 Dec 2009	Tue 15 Dec 2009	I saw your article about the Kids In Micro-g! challenge and noticed that the students are to use materials from a specific kit that can be obtained from NASA. I would like to know how much these kits are and how to obtain them?	The kits cannot be obtained from NASA but the contents of the available items can be obtained on the <i>Kids In Micro-g!</i> Web page. The available items are commonly found in classrooms or are otherwise readily available to your educator. We ask that you construct your experiment using only materials on this list.
35	Wed 16 Dec 2009	Thu 17 Dec 2009	Would a very small amount of salt be available on-board ISS?	Yes, the crew does have liquid salt available as a condiment.
36	Wed 16 Dec 2009	Thu 17 Dec 2009	Are there any other items on-board that are acceptable that aren't on the list, for instance, test tubes?	Structural materials and containers not on the list will be disqualified.
37	Wed 16 Dec 2009	Thu 17 Dec 2009	If water is involved in our experiment what are the design constraints?	<p>One of the goals of this exercise is to teach students how to be innovative within the same constraints the crew experiences every day. For example, Astronaut Don Pettit built a barn door tracker during Expedition 6 with spare parts.</p> <p>All selected experiments will be subject to scrutiny by the Payload Safety Review Panel. They will be looking for fire, electrical hazards, mechanical, and crew health hazards, among others. If water is a part of the experiment, consider how its use might present a hazard to the crew and/or their equipment.</p>
38	Wed 16 Dec 2009	Thu 17 Dec 2009	Do the paper clips have a coating on them or are they just metal?	The paper clips are just metal.

Question Number	Date Received	Date Posted	Question	Answer
39	Sun 27 Dec 2009	Mon 28 Dec 2009	Would there be access to hot and cold water on the ISS?	Yes, the crew has access to both hot and cold water.
40	Fri 1 Jan 2010	Mon 4 Jan 2010	For the Kids in Micro-g project: can I use video to explain the instructions/process of my project? Also, can I use MacBook applications (such as Pages and Keynote)? These applications are basically the same as Word and PowerPoint.	We regret we cannot accept video explanations or the use of any other computer software applications other than Microsoft Word or Microsoft Powerpoint as submissions for the instructions/process of planned projects. These guidelines were given in an attempt to adhere to the most currently standardized use and availability of software applications not only for the contest entrants but for the potential evaluators as well, and diminishes a possibility of incompatibility along the way.
41	Thu 7 Jan 2010	Thu 7 Jan 2010	I'm trying to find out what email address to send current proposals to. I could not find it on your website.	You may send your proposals to this same email address that you submitted your question: <a href="mailto:jsc-iss-payloads-helpline@mail.nasa.gov">jsc-iss-payloads-helpline@mail.nasa.gov</a>
42	Fri 8 Jan 2010	Fri 8 Jan 2010	My students and I are studying magnetism and electricity and we are wondering if we are allowed to send in a few magnets with our experiment presentation to be used as part of our experiment on magnetism in microgravity? We would use the rest of the equipment from the list on the website.	Unfortunately, there is no allocation to fly up additional materials to the ISS, so no additional materials or equipment apart from the items on the equipment list posted at the <i>Kids in Micro-g!</i> Web site can be utilized for the student experiment.

Question Number	Date Received	Date Posted	Question	Answer
43	Fri 9 Jan 2010	Mon 11 Jan 2010	I have been reviewing your information webpage for the Kids in Micro-g Challenge, and I am unable to locate the downloadable videos mentioned, nor can I find video clips of demonstrations of those previously conducted on orbit. Can you give me further assistance as to how to locate these resources? Are the videos available yet? Where in the e-clips can I find the reduced gravity demonstrations. I have been trying to use these parts of the webpage <a href="http://www.nasa.gov/mission_pages/station/science/nlab/experimentchallenge.html/">http://www.nasa.gov/mission_pages/station/science/nlab/experimentchallenge.html/</a>	You are looking in the correct place ( <a href="http://www.nasa.gov/mission_pages/station/science/nlab/experimentchallenge.html">http://www.nasa.gov/mission_pages/station/science/nlab/experimentchallenge.html</a> ), however we regret that the videos were not posted in December 2009, as originally planned. The video clips and brief descriptions should now be posted on that Web site available for viewing.
44	Wed 13 Jan 2010	Thu 14 Jan 2010	My students are wondering if the markers in the list are water soluble?	The highlighters are water soluble, however the Sharpies, including the colored pens, are not.