Lab space for primary school

Posted by Anonymous on Wed, 2016-07-13 20:45

Lab space for primary school: Establishing a primary school science area.

We have won a grant to construct a multi-purpose building including a science area in a primary school setting.

Currently, the building is composed of 3 spaces, about 70m2 each, separated by folding doors that can be opened up to create a larger space. One space will have a wet lab, which we're now thinking will be a combined wet and dry lab. Plans for the other two spaces are digital tech and Indonesian. Functionality and safety of the lab space are a high priority.

The space needs to be functionable and workable with ample storage and room for displays. It needs to engage students in science. Walls in the rooms are half walls with glass for the top. One of these rooms needs to be darkened to teach Earth and Space science.

Couple you please provide information of efficient space saving storage solutions and pros and cons of portable benches, book/display shelves, touch tables, and chemicals permitted in a primary school setting.

Voting:
No votes yet

Year Level:
Foundation
1
2
3
4
5
6
7

Laboratory Technicians:

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Submitted by sat on 21 July 2016

Answer reviewed 20 February 2023

It is important to have a workable space which includes adequate storage to enable hands-on learning. Therefore we suggest that the following are considered:

- **Half windows:** could have block out blinds fitted to enable a dark room
- **Benches on wheels:** allow for flexibility, but they need to be ergonomically designed for ease of movement and locking wheels for safety and stability.
- **Under bench storage**: is a good idea as long as staff or students are not sitting at the bench as leg room is required.
- **A dedicated storeroom**: for science resources is recommended if at all possible for the organisation and safety/security of science resources and materials.
- **Display materials:** make for an interesting room and encourage interaction from the students. It will depend upon the layout of the room whether it is possible to have a display/touch table/bookcase. This may be more achievable if the science 'room' is at the end of this large area rather than in the middle. Pinup boards on walls are useful to display posters, student projects and learning materials
- **Plumbing services:** as required for access to water and sinks. It is important at the planning stage to ensure that there is a sufficient number of sinks installed to enable easy access by a class with a large number of students. Consideration should also be given to suitable splashbacks and water resistant materials that can be easily cleaned.
- **Floor coverings:** Heavy duty slip resistant vinyl is a suitable floor covering in wet areas.
- **Electrical Services:** consideration should be given to the provision of General Power Outlets (GPOs) and ICT resources appropriately located away from sinks. Power points may be required for electrical appliances such as hotplates or microscopes (with inbuilt lamps). Note: hotplates are better suited as a heat source rather than a Bunsen burner in a primary school setting.
- **ICT:** A data projector would be a useful installation and a high resolution document camera would be advantageous. This may be integrated in all three spaces.
- **Suitable chemicals for primary schools:** it is preferable that any substances used in junior science should be non-hazardous consumer items readily available from consumer outlets such as supermarkets. It is important prior to using any chemicals to consider any hazards involved by conducting a site specific risk assessment. We have indicated in our List of recommended chemicals for science in Australian schools, those chemicals suitable for use in primary schools, with a user group code of F-12
- **Other safety considerations, Access and egress:** Ensure that there is sufficient space to allow students to work safely and for staff and students to be able to have quick egress in the event of an emergency.

It is difficult to find a single resource to address all your questions. The the following links contain mainly secondary science area design information which may be helpful:

Barrett, P, Davies, F., Zhang, Y and Barrett, L. 2015. ‘The impact of classroom design on pupils' learning: Final results of a holistic, multi-level analysis’. *Building and Environment* 89: 118–133. ScienceDirect website, doi:10.1016/j.buildenv.2015.02.013 Need log in to access. (Accessed 7 February 2023)

Butin, Dan W; Biehle, James T, Motz, LaMoine L and West, Sandra S. 2009. *Science Facilities*, NSTA Press, Arlington VA, NSTA website,https://eric.ed.gov/?q=science+facilities&id=ED507915

Johnson, B, (2014, October31). Design Tips for Science Learning Spaces, Retrieved from the Edutopia website: https://www.edutopia.org/blog/design-tips-science-learning-spaces-ben-jo...

Motz, laMoine L; Biehle, James T and West, Sandra S. 2007. *NSTA Guide to Planning School Science Facilities*. 2nd Edition. https://my.nsta.org/resource/100059 Need log in to access

Piggott, A. (2018) ‘*Lab design*’, Retrieved from the ASE website, https://www.ase.org.uk/resources/lab-design/This webpage has several extremely useful resources, although they are mainly for the secondary school.

Science ASSIST. 2017. GUIDELINES for the design and planning of secondary school science facilities in Australian schools. Retrieved from the Science ASSIST website: https://assist.asta.edu.au/resource/4175/guidelines-design-and-planning-...

Stem Learning, (nd) *5 Laboratories facilities and equipment.* Retrieved (18 February 2023) from the STEM learning website: https://www.stem.org.uk/good-practical-science/laboratory-facilities-and...

Victorian Department of Education and Early Childhood. 2008. '2. Stages and Spaces' Case studies of general school design: pp. 20–46 in *Victorian School Design*, Infrastructure Division: Melbourne. Victorian Department of Education and Early Childhood website: http://www.education.vic.gov.au/Documents/school/principals/infrastructu... **This has examples for primary school spaces.**
