

LEGO Data logging Development Session

Highlighted Activities:

- Pulse Rate Monitor (using Sound Sensor)
- Using the Light Sensor and a line of regularly repeating lines to gauge the speed of an NXT vehicle.
- Using the touch sensors to test reaction time.
- Developing a program to make the NXT vehicle turn in a circle.
- Working on making the NXT vehicle recognize different color shades with the light sensor.



Major Principles Identified in Development Lab

- NXT Data logging does not add value to every type of STEM activity; some activities are more successful with low-tech solutions (i.e. paper, pencil) or with other data-logging program.
- NXT Data logging does not always require educators to develop a new activity; NXT Data logging can enhance (rather than replace) existing activities.
- NXT Data logging does not need to be complex to be powerful, as using a sensor to explore real-world phenomena can be a meaningful experience to students.
- A lot of time should be set-aside for NXT Data logging (and NXT robotics) activities, to provide students the opportunity to “fail” and to develop improvements for their experiments.
- NXT Data logging also requires preparing students to use the technology and to understand what the collected data represents/indicates/captures.



Additional Concepts Discussed

- NXT Data logging is applicable to STEM activities, but it seems to work better in certain disciplines (i.e. Mathematics, Physical Science)
- The sampling rate and sampling response of the NXT sensors and the NXT Data logging program are not always clearly defined in the software.
- Students unfamiliar with NXT Data logging can help experienced students rethink data logging concepts and limitations.
- Adding a context to a Data logging activity doesn't always mean making up a "story" – real-world connections can be as valuable for different learning styles.
- Some programs are better for the detailed aspects of data logging.
- Including a context for the data collection can enhance some data logging activities. Likewise, activities with strong contextual foundation can be enhanced through data logging.
- Students should have the opportunity to explore NXT programming, NXT data logging, and NXT data logging with program. Each part is important to student progress.
- Data logging activities should be useable by both novice and advanced students.