

## Habits of Mind > Using Tools and Devices

### Research on Student Learning

Upper elementary- and middle-school students who can use measuring instruments and procedures when asked to do so often do not use this ability while performing an investigation. Typically a student asked to undertake an investigation and given a set of equipment that includes measuring instruments will make a qualitative comparison even though she might be competent to use the instruments in a different context. <sup>[1]</sup> It appears students often know how to take measurements but not what measurements to make or when. <sup>[2]</sup>

### References

[1] Black, P. (1990). Can pupils design their own experiments?. *Proceedings of the international conference on physics education through experiments*, 281-299.

[2] American Association for the Advancement of Science, Project 2061 (2007). *Atlas for Science Literacy*, 2, 4.