

Interdisciplinary Mathematics and Science (IMS): Data Modelling of Plant Growth in Grade 2

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The Interdisciplinary Mathematics and Science (IMS) 3-year longitudinal project^{a,b} (<https://imslearning.org/>) is developing and investigating a pedagogical approach that implements integrated learning sequences where students' representational systems in the two subjects can support measurement and data modelling (Tytler et al., 2023). The model of interdisciplinarity is illustrated through a case study of a learning sequence on plant growth with Grade 2 classes based on Lehrer and Schauble's (2004) approach. The guided inquiry pedagogy involves students in engaging in concepts that sit at the intersection of the two disciplines (estimating, measuring, representing and explaining growth of plant height and depth, changes over time, and organising and structuring data to best display results). We describe the pedagogy used by teachers to support mathematics learning, measurement and data representation. Data sources comprised student artefacts, interviews with students, and pre- and post-test results of student's conceptual understanding and mathematical representations. Grade 2 students' data collection and recording of measures, their predictions and representations of plant growth demonstrated their impressive and emerging mathematical and scientific knowledge through structured inquiry.

References

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