Our research design mirrors that of Nardi and her colleagues in the UK and consists of designing and trialling Tasks with pre- and in-service secondary mathematics teachers in the UK and Brazil. Our Tasks also engage teachers with fictional, yet data-grounded classroom scenarios that aim to identify and challenge ableist perspectives on mathematical learning. The Tasks are informed by the research that has been carried out by Healy and her colleagues in Brazil with mathematics learners with disabilities or with specific difficulties in learning mathematics. In line with the Brazilian research, the mathematical content of the scenarios draws on ideas fundamental in the school mathematics curriculum in both countries. Alongside the conventional mathematics representations associated with these ideas, the activities also present multisensory representations through which learners can experience mathematical structures through touch, sound, movement and the like. The scenarios are based on data collected with students who might be blind, deaf, who experience particular challenges related to the cognitive process of memory and attention or who have other interesting ways of experiencing the world.