



**Margaret Wertheim**

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**How to Play Mathematics**

Public Talk with Reception to Follow

Museum of Texas Tech University

**How to Play Mathematics:** What does it mean to know mathematics? Usually we associate math with equations and think of it as the epitome of symbolic reasoning. Yet all around us simple organisms and objects are performing extraordinary pieces of mathematics. Sea slugs and corals realize in their anatomies hyperbolic geometry, a form that human mathematicians spent hundreds of years trying to prove impossible. Swooping towards a prey, a peregrine falcon executes a logarithmic spiral. Bouncing about a room, sound waves enact the complexity of a Fourier Transform. Meanwhile African artisans discovered fractals centuries before European mathematicians and have long incorporated them into designs of cloth, pottery and village architecture. Islamic mosaicists, masters of geometrical construction, discovered aperiodic tilings more than 500 years before modern mathematicians. In this multidisciplinary talk, Margaret Wertheim will argue that mathematics isn't just something we do with our minds, it can also be engaged with through the process of material exploration and play.