AREA FOR THE VERY YOUNG

What's the area of a circle? Let them come up with all sorts of conjectures for a while. Eventually you ask, what does 'area' mean? Lead them to the idea of a unit square. O.K., so what's the area of this 5 x 5 square? This 3 x 4 rectangle? Is it the same for a 4 x 3 rectangle? Why? What about a shape made of rectangles clumped somehow together (area is additive). But what about overlaps? Fine. Next stage: what's the area of this isosceles right triangle? As always, let them come up with the idea of completing it to a square. Non-isosceles right triangle? Seeming digression: area of a parallelogram? (Hope they get it by cutting off one right triangle and rotating it over to the other end). OK, area of a non-right triangle? Lots more to do in here, much of it following their leads (areas of regular, then irregular, polygons; becoming experts at triangulating, dissecting; shapes with holes in them). Advanced multiplication: many floors of a building, each the same rectangle; division: many identical rooms n the same floor. Then: what about that circle we started with? Hope they find - or you very unobtrusively push on them - trapping its area between circumscribing and inscribing polygons (Pythagorean Theorem as an aid here). Lots of directions now: toward limits; irrationals; integration.