# The main expository steps

1. **All DES models are point processes that run in parallel or in series.**Build intuition about how you tell a model’s story when you think of the events as the explosions of fused time bombs that are lit and go off at different times. If you know how to draw the times that the bombs are lit and go off, and you know how to arrange them, you have a model.
   1. Do not discuss yet how we generate the times that the bombs go off – speak abstractly.
   2. The time bombs are our LEGO pieces. There are different types of time bombs
      1. Some go off 0, 1 or many times (tumors)
      2. Some will go off exactly once in an interval (all cause death)
      3. Some go off at most once (clinical cancer)
   3. Build intuition:
      1. The model we use
      2. The model we use, but start the cancer death process only after clinical cancer emerges.
      3. A model with more than one tumors
      4. Some idea about how a “professional” model looks (e.g., COBRAS, Kystis, SCOUT)
2. **Understand how to work with NHPPPs – the LEGOs**
   1. The formal definition and the intuition behind it
   2. Key properties important for simulation
      1. Memorylessness
      2. Composability
      3. Time warping
   3. Strategies for sampling
      1. Constant rate is easy
      2. For time-varying leverage the fact that you know how to sample from constant rate
         1. You will always know . Motivate thinning with (de)composability
         2. Sometimes you know . Motivate inversion time warping
3. Model a single person
   1. Our example has
      1. Constant rate
      2. Piecewise constant rates
      3. NHPPPs where you only know
      4. NHPPPs where you can get
4. Model persons