

## Activity title: Herd Immunity Jenga

*Suitable from approx. age 6+*

*This activity can be done with individuals or small groups and requires a facilitator*

### **Aim:**

To demonstrate the concept of herd immunity to participants and why vaccination is important in stopping the spread of diseases.

### **Materials/set-up:**

- Two games of [Jenga](#) (set 1 and set 2) – they should be the same sizes but set 1 should be a different colour (can be painted or coloured in)
- Swap 10 blocks from set 1 with 10 blocks from set 2 (so there are 10 blocks in set 2 with a different colour)
- The tower of blocks represents a group of people. **The coloured blocks are people who have not been vaccinated.**
- The participant acts as a disease infecting the people and tries to remove the coloured blocks (i.e those people not vaccinated).
- In set 1 the majority of blocks represent people who have not been vaccinated, all except 10 of the blocks have been coloured in. Participants try to remove the unvaccinated people (i.e. the coloured blocks) which makes it hard to keep the tower standing.
- In set 2 the 10 different coloured blocks represent people who have not been vaccinated. In this game most people are vaccinated. Participants try to remove the unvaccinated people (i.e. the coloured blocks) - they can be removed easily, the tower still stands, and everyone will be protected by the people who were vaccinated and did not get ill/the blocks which did not fall down. This should communicate the idea of herd immunity.

NB if you don't have two sets of Jenga, as long as you can make some blocks different from the others, this game will work. For example, cover blocks in foil or place stickers on them.

### **What to do:**

**Facilitator:** Would you like to play a game of Jenga with a twist? This tower of blocks represents a group of people like the community you live in. You will act as a disease and try to infect the people by removing blocks. Can you remove all of the coloured blocks [set 1]?

*Participant tries to remove all coloured blocks (this should cause the tower to collapse)*

**Facilitator:** The tower has collapsed. This is because the coloured blocks represent people who have not been vaccinated against a disease e.g. measles. When the majority of the population are not vaccinated against a specific disease this can easily develop into an outbreak of infection and lots of people become unwell i.e. the tower collapses.

Let's see what happens when most people are vaccinated. Can you try and remove all the coloured blocks in this second tower [set 2]? This time, most people have been vaccinated against the disease.

*Participant removes all the blocks (this should be relatively easy)*

**Facilitator:** Well done, so you'll see the tower is still standing. In situations like this when most people have been vaccinated against a specific disease and only a few are not vaccinated, the result is that the majority are protected due to the high level of vaccination. This is known as herd immunity. When herd immunity is high, the chance of people coming into contact with the specific disease is reduced. This protects not only the individual but those most vulnerable in their community who are not able to be vaccinated themselves.

**Facilitator optional further explanation/discussion:** Obviously it's not always as straightforward as this and public health does represent a continuum. However, these examples do reflect real world situations. For example, in many developing countries a large number of the population may not have access to vaccination. This means that disease can easily spread leading to many people becoming ill. However, in other countries such as the UK, when the majority of people are vaccinated at a young age, this means we rarely see widespread disease.

Several infectious diseases including measles, mumps, rubella, diphtheria, tetanus, whooping cough, tuberculosis and polio are no longer a threat in Europe due to the successful application of vaccines. However, as vaccination rates decrease below herd immunity level, we see outbreaks of diseases. Therefore, it's important to vaccinate children to protect them but also those most vulnerable in the community who are not able to be vaccinated – such as new born babies, the elderly and those whose immune systems are weak due to other illnesses.