Theme 1: Living Longer

Because of breakthroughs in medicine and better healthcare, we are living longer than ever! But as we get older our needs change.

What can technology do to meet the needs of an ageing society?

In this pack you will find:

- An overview of the theme.
- Examples of the opportunities and challenges within this theme.
- Probing questions and sub-themes to help you think about how technology can be used within this theme.
- Case studies of real examples of how technology is helping solve issues within this theme.

We're getting older!

The elderly population is set to more than double by 2050 world wide. By 2040, nearly one in seven people in the UK is projected to be aged over 75. [1]

The life expectancies for women and men in the UK as of 2017

	Life Expectancy	Healthy Life Expectancy
Women	82.9	63.6
Men	79.2	63.1

Life expectancy is the number of years a person in a particular society can expect to live
Healthy Life Expectancy is the number of years a person can expect to live in a healthy and independant way, e.g living in their own home, going out on their own, not needing a lot of medical supervision, etc. [2]

You can also take a look at our other themes:

Theme 2 Living Better

Theme 3 Living Together

Theme 4 Living Greener

It's great that we are living longer, but we would also like to live well as we age. Here are some of the challenges and opportunities we face in trying to create better lives for older people

Staying Active

Challenges

As we get older our bodies experience lots of wear and tear. How can we make sure that older people are getting all the health care they need?

How can technology help?

- How could tech be used to help people support older people to move more?
- What data or information would be helpful to older people to keep them active? Could tech be used to help get this information to them?

Better Connection

Challenges

Older people are at a higher risk of being lonely than most people. In England alone over 2 million people over the age of 75 ilive alone. How can we keep older people connected with their families and communities? [3]

How can technology help?

- How can tech help older people feel less lonely and more connected?
- Is there any data or information that older people could use to help them stay connected? Could tech be used to get them this information? [3]

Staying Independent

Challenges

As we get older we may need more help getting around.To help older people stay independent we need to develop tools to help them keep doing what they love.

How can technology help?

- How could tech be used to help people find help & information about mental health ?
- Can tech be used to help detect potential mental health issues early?

More Opportunities

Challenges

Getting older doesn't mean there still aren't many ways to continue to society and do things that bring us joy. What are the ways we can keep older generations involved in society?

How can technology help?

- How can we use tech to help older people stay involved and contribute to society?

Staying Independent

ElliQ

ElliQ is an example of an Artificial Intelligence (AI) powered virtual assistant specifically designed to support people as they age.

Watch this 1:56 min video

The goal of virtual assistants like this is not to replace human relationships, but to provide an accessible form of technology that can support older people, helping them stay connected and engaged.

What are the problems ElliQ is trying to solve?	How is tech being used to help?
Getting in touch with people when needed - calling relatives of care workers or contacting emergency services **Conversation** - Is able to recognize when a person is in a room and initiate conversations **Reminders -** reminders to take medication, do the shopping, call a relative, go for walks etc. **Making online content more accessible** - it provides curated videos, news, interesting facts **Cognitive games** - helping to keep older people cognitively engaged.	**Learning:** Using machine learning algorithms, AI can learn what is or is not normal behaviour and when a care worker or relative needs to be contacted. For example if someone falls, or they are not moving around as much. **Understanding human speech** - With the use of smart speakers, an elderly person can order online shopping, make calls, and operate smart devices e.g. close the blinds, turn off lights etc.

Are there any risks?

Access to data:
Who has access to camera feeds, and other home monitors?
This is an important question, especially when dealing with vulnerable people.

Responsibility
If technology is taking on some of the caring activities for someone, how can we ensure that the responsibility to care for this person is not lost from others e.g. family, carers, medical professionals?

Staying Active

VR Immersive Training

Embodied Labs has created a virtual reality training programme that allows caregivers and healthcare workers to experience what some of their patients go through.

Watch this 1:13 min video

This helps them to not only better understand the diseases they treat better. It also helps them communicate better, understand experiences and emotions better, and provide overall better care.

What are the problems are they trying trying to solve?	How is tech being used to help?
Communication: Empathy is the ability to understand and share the feelings of another, and it helps us become better communicators. It can be hard to empathise with other people if you have no idea what their experiences are like, and it's much easier to empathise if you've been through the same things. Virtual Reality training allows caregivers and health workers to experience what their patients go through, and helps them understand their needs better and to communicate with them better. **Better care:** Allowing those that work with older people (especially those with health care needs) to understand their patients more can lead to better care.	Virtual Reality creates a simulated environment that you can interact with as if it were a real environment. It does this using 3D vision and sometimes sound. **Virtual Reality headset**: these use a gyroscope and accelerometer to track your head movement, and a stereoscopic display (to create 3D image). Some newer versions use external sensors to track head movement, and now many smartphones can be used to create a VR headset. **Virtual Reality Environment:** You also need to create the VR environment. There are various paid and free online tools and apps that can help you do this. This video explains how VR works

Are there any risks?

Overlooking the experiences of real people
It is important to keep in mind that the virtual reality experience of a few situations or people does not represent everyone's experience and that there are many people that will have very different outlook. It is still important to try to understand the people that are around you.

Motion sickness
This is a small risk, but it is important to keep in mind some people experience motion sickness when using VR, and to prepare them for this.

Some other examples you can check out:

- **Grandnanny:** A lot of older people face discrimition trying to find a job. This platform helps combat this by providing jobs specifically aimed at older people.
  - website
- **Joy for all:** Companion pets for older people.
  - website

References
1. https://www.openaccessgovernment.org/technology-ageing-population/57294/
2. https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthandlifeexpectancies/bulletins/healthstatelifeexpectanciesuk/2015to2017
3. https://www.nhs.uk/conditions/stress-anxiety-depression/loneliness-in-older-people/