About Your Life

Your Life is a three-year campaign to ensure the UK has the Maths and Physics skills it needs to succeed in today’s competitive global economy. Your Life prioritises offering experiences and information to enable young people to make informed subject choices post-16, in order to inspire them to study Maths and Physics as a gateway to wide-ranging careers and triggering employers to recruit and retain their talent. Your Life operates a year-round campaign of activity, engaging with young people, teachers, parents, business and Government with an ultimate goal of increasing the numbers of young people studying Maths and Physics post-16 by 50% by the end of 2017.

Your Life is sponsored by industry, supported by the Government and led by a board of directors. The board, chaired by Edwina Dunn, co-founder of dunnhumby and CEO of Starcount, includes Martin McCourt, former CEO of Dyson and Ros Rivaz, former CTO of Smith & Nephew. Your Life is guided and sponsored by a group of leading companies and major UK employers: BAE Systems, Carillion, Johnson & Johnson, AT Kearney, Nestle, Shell and Rio Tinto.

Your Life is submitting evidence as we believe the key to solving the STEM skills crisis lies in the education system and making the link for students between subjects, skills and jobs. In better encouraging and incentivising students to study Maths and Physics at A Level we can go some way to providing the UK with the workforce it needs to compete in the future.

Our Chair, the world leading data-scientist Edwina Dunn, would welcome the opportunity to appear before your committee and expand on the points raised in our submission.
1. Executive summary

- This submission focuses on our ‘Tough Choices’ report, produced by AT Kearney, Your Life sponsor and global management consultancy, which details the key reasons young people are being turned off Maths and Science and our response to it. The key reason identified is a lack of knowledge about where STEM would lead. Your Life’s approach to address this is to develop an app reaching over a million teens that could have a game-changing impact in linking subject – skills and jobs.

- Using original research and studies from King’s College London and University College London, Tough Choices shows that as young people progress through school, interest levels that start high wane each year.

- The reasons include:
  1. An alarming lack of knowledge of where these subjects will lead.
  2. The subjects becoming less practical through school and perceived as not being relevant.
  3. A desire by parents and teachers for good grades in less challenging subjects.
  4. A perception the subjects are only for the ‘ultra-bright’.
  5. A skew towards boys doing the subjects as they are seen as being ‘masculine’.

- To challenge these perceptions Your Life targets 14-16 year olds directly, taking groups of students into businesses to improve knowledge of the world of STEM work and providing exciting and interactive workshops.

- We also create digital content aimed at teenagers, to surprise and excite them about the possibilities unlocked by studying Maths and Physics. We challenge their perceptions by showing the diversity of STEM, both in terms of gender and application. We have seen impressive growth in views, followers and engagement in a short space of time.

- Although we have achieved some impressive success with our approach, in evaluating our campaign to date, we have identified a key missing component for students: an app that links subjects, skills and jobs and fills the gap in knowledge Tough Choices identifies. We would distribute this app via partnerships and social media.

- At a policy level we think schools should be assessed on subjects as well as grades with more weight being given to Maths and Physics. This is the single biggest most important change that could transform the landscape in boosting STEM take up and help get the country the workforce it needs. We also know students are far more likely to do STEM A Levels if they have done triple science at GCSE, so moves to increase the number of students taking triple science would also be welcome.
2. **The Tough Choices report**

Your Life commissioned a report called Tough Choices in March 2016, developed by A. T. Kearney in partnership with the Your Life campaign and Confederation of British Industries (CBI). The report found large numbers of young people are put off Maths and Science ‘in their droves’ during secondary school. We are including an abridged version of the executive summary with evidential points highlighted and referenced but we would recommend a more detailed review of the research, which is available for download via: [https://www.yourlife.org.uk/stem-skills-gap](https://www.yourlife.org.uk/stem-skills-gap)

The report reveals a lack of knowledge amongst teachers and parents about job prospects for Maths and Science subjects unintentionally resulting in young people not understanding the skills needed for success at work. The report pulled together two recent and extensive academic research programmes (Kings College London and Aspires and Upmap from University College, London) as well as carrying out some original qualitative research. The intention was to present an holistic analysis of the evolution of secondary school students’ thinking with regard to STEM subjects. Many surveys have targeted this issue in the past often pointing to a single root cause, be it curriculum difficulty or gender stereotyping. While these factors all play a role, the most startling finding of our research is that the low uptake of Science and Maths post 16 reflects apparently rational decision-making. Students focused on subjects they believe will be useful for their future career and where they can be successful. In tens of thousands of survey results conducted under rigorous academic protocol, the message shines through that most young people see STEM as a dead end. The key conclusions are:

- Teenagers have an alarming lack of knowledge of the many career paths dependent on STEM qualifications, despite employers calling for these skills. In AT Kearney’s research the most common answer given when asked what you could do with Physics was ‘don’t know’. (Tough Choices report: Page 10) Paradoxically Gaming is the number one industry in which boys want to work in (51%), with healthcare number one for girls, (27%) both needing STEM skills as their bedrock. (Your Life, Censuswide, June 2016.) However teens don’t realise the way to realise these dreams is via STEM study.

- As they progress through school, students lose interest because Maths and Physics lessons become less practical, reinforcing their perception that there is limited career relevance. 72% of girls say they are interested in Science at the start of secondary school. But this results in just 19% taking two STEM A Levels. For boys it is 75% falling to
Written evidence submitted by Your Life Community Interest Company (GAP0027)

33%. (Tough Choices: fig. 3, page 7) Meanwhile only 1 in 31 girls are taking Maths and Physics. (Department for Education data 2014-15 academic year)

- Interviews carried out by AT Kearney indicate that teachers and parents push students to prioritise good results and steer them away from STEM. Students say they listen to this guidance. (Tough Choices report: Page 15)

- Students selecting their subjects for A Level (or equivalent) hear a clear message from teachers, parents and peers: STEM study is only for the “ultra-bright”. School policies on streaming often reinforce this. In Physics only 43% of those with A* in GCSE Physics continue to study it post-16. (DFE research report, GCSE to AS Level and continuation to A Level 2012). 42% of girls are opting for other subjects because they think they will get better grades, versus 33% of boys. (Your Life, Census Wide research, June, 2016.)

- Evidence does suggest that historically it has been more difficult to earn high grades in STEM subjects than in nominally vocational subjects and that it remains harder to achieve high marks in Physics than Media Studies. (Tough Choices: figure 5, page 12)

- These root causes are common among girls and boys, but the effect on girls tends to be more extreme because girls are additionally put off studying STEM because certain science-related careers seem to have a more “masculine” image. (Aspires 2 Kings College London, survey of 15-16 year olds, 2014)
3. Addressing the skills need, Your Life’s approach to date

There have been multiple policy interventions to try and solve the problem. One of which is the Your Life campaign, which commissioned the Tough Choices report. Your Life’s approach to date has been a three tiered one: a) Directly engage and influence 14-16-year-old target audience b) Corporate, Government and stakeholder engagement and collaboration to deliver scale and amplification and c) Provide content and spokespeople to drive positive media profile of career opportunities offered by the study of Maths & Physics.

i) Direct engagement

Although policy changes would undoubtedly make a major difference, Your Life’s remit is to focus directly on 14-16 year olds in the lead up to their A Level decision, with the aim of influencing the outcome and helping address some of the misconceptions about STEM study. The approach is to highlight that STEM jobs do not lead to a dead end, but the opposite. Our fully funded direct engagement strands aim to link to the 8 Careers Guidance best practice principles set out by the Gatsby Foundation. We enable employer encounters through our Best School Trip activity, taking groups of students into businesses so that students can understand the career pathways opened up by Maths and Physics. These trips have included visits to dynamic companies such as Shazam, Amazon, Coca-Cola, Sky. After these trips 84% of students say they would consider Maths and 75% Physics. We also recently enabled further employer encounters through an online live chat platform to enable us to connect school students with employers in regions where employer/school engagement is low. Finally, Gamewagon plugs the gap in practical application of Maths and Physics identified by our tough choices research and links careers with the curriculum IN an engaging interactive format.

ii) Digital content

We have produced an exciting series of videos produced for You Tube and Facebook helping to excite, surprise and inspire teenagers about the potential opportunities opened up by studying Maths and Physics. These help to show the practical, relevant use of STEM in a language they are used to, appealing to their passions. Examples include ‘The Science of Pokemon Go’ and ‘The Physics of Ballet’. The inspirational ‘Draw My Life’ series, helps to challenge the masculine image of STEM by highlighting the work of famous female scientists, while our ‘Guess Work’ career profile videos feature an inspirational, diverse cast list with students guessing the surprising occupation of the person from a series of clues. The success of our videos are underscored by the fact that they
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perform better than 95% of videos in the same ad set in terms of relevance, according to Facebook analytics.

iii) Media amplification
We also initiated hard-hitting media stories aimed not only at teenagers, but also teachers and parents, to influence them to encourage their children to study STEM. The launch of Tough Choices saw a significant level of media coverage. We have produced consumer stories on topics such as parents’ anxiety with Maths hampering their children’s interest in the subject. We also launched a competition with Getty Images to re-picture STEM, creating a new set of diverse images to challenge and change the stereotyped masculine image. Our media work has been aided by our campaign patron, Beth Tweddle, an inspirational figure, former Olympian, sports scientist and business woman who has great impact with both students and parents.

4. Evaluation

The results so far have been very encouraging. A recent nationally representative survey we conducted with Censuswide found that 17% of all teens were aware of the campaign, rising to 22% of 16 year olds, just two years following launch. 48% of these respondents said the Your Life campaign had made them more likely to study Maths and Physics. 7% said less likely and 44% said no change.

Total views for our video content have grown in 2016 from 103,889 to 732,000, a more than 600% increase. Our engagement rate (likes, shares or comments) is more than 2%, against an industry average of 0.5-1%.

In terms of schools engagement we have reached more than 5,000 teenagers directly. This has resulted in an average of a 10% shift in stated behavioural change toward studying the subjects. We have had tremendous feedback from teachers. According to Vicky Langston, Co-ordinator of work related learning, Bishop’s Hatfield Girls’ School on a recent Gamewagon visit: “We had a fantastic session with the Gamewagon yesterday doing the Mars lander workshop. The girls were buzzing when they came away from the activities and the year 9 group rushed off to tell their science teachers all about what they had got up to! The students were very engaged throughout, tackled the activities with enthusiasm and were competitive with each other.”
Careers App

• Following a thorough scoping exercise, The Your Life campaign has identified the key missing element as being a careers app, delivered at a large scale, linking subjects, skills and jobs. This app, offers the potential for us to have the impact of our direct engagement, but at the scale of our digital content.

• Having identified this gap in the market, we are working again with AT Kearney and a variety of data sources on the app with the intention of delivering it in Spring 2017. The app will present the pathways opened up by different A Level combinations and be an effective way of countering views expressed in Tough Choices that the subjects are a ‘dead end’. It will also challenge the apparently ‘rational’ decision-making of teenagers. Bringing these principles to life results in a tool which will be unique in the market in terms of its focus on the A level student.

• The user will be able to enter their A level combinations to get the likelihood of whether they unlock the jobs they are interested in. They will also be able to select the careers they are interested in and be provided with the best A levels to maximize their chances of securing these jobs. We are confident that when presented with the evidence, this could have a dramatic impact. 88% of teenagers say they want more information on how subject choices are linked to jobs. (Your Life, Censuswide, November, 2016.) An app made widely available in schools that helps them connect their subjects and possible careers to their passions and challenge their ‘rational’ decision-making could really shift perceptions.

We are already in discussions with several media organisations and schools groups about achieving a truly nationwide reach for the app. Based on partnerships which we have developed and our ability to target teenagers directly through social media we have modelled a reach of 1,124,000 teenagers in year one. We would only need a small percentage of these students to change course to be well on our way to achieving our campaign goal of a 50% increase in students taking Maths and Physics A Level. This is an overall figure of an extra 39,530 students studying Maths and 16,121 studying Physics. This would go a long way to addressing the skills gap the country urgently needs to fill.
5. Policy recommendations

At the same time as reaching teenagers directly to shift views, two policy areas would clearly make a big impact. These are:

- We think a shift away from a purely grades focus in assessing schools is crucial. Schools being assessed on subjects as well as grades, with additional weight being given to Maths and Physics could have a game-changing impact. This would counter the issue, identified by Tough Choices, of perceived difficulty in completing these subjects. Writing in City AM newspaper recently our chair Edwina Dunn described it thus: “In assessing business performance you would never just look at one KPI so why is it with the education of young people to ready them for the world of work, we are prepared to go down this route? Especially when all the evidence points to it leading them down the wrong path for their future and where the jobs are. To be fit for the digital future we need to invest in the talent and not be left at the starting blocks by other nations who are already streets ahead.”

- A focus on encouraging as many schools as possible to offer students triple science would also help to redress the balance and provide the economy with the workforce it needs. Students who study triple science at GCSE are twice as likely to study a science A Level. (Your Life, Censuswide, June 2016.)

6. Cost of the measures

- Your Life is funded by eight corporate sponsors with an overall budget of £2.4m across the funding period (2014-2017).