Supporting African Maths Initiatives

(A company limited by guarantee)

Report and Financial Statements
for the year ended 29th February 2020

Charity number 1161994
Company number 9458921

Supporting African Maths Initiatives - Report of the Management Committee for the year ended 29th February 2020

The Management Committee presents their report and the financial statements for the period ended 29th February 2020 and confirm they comply with the requirements of the Charities Act 2011 and the Charities SORP (FRS 102) .

Reference and Administration Information

Charity name: Supporting African Maths Initiatives
Charity registration number: 1161994
Company registration number: 9458921
Registered address: 4 Redway Drive, Twickenham, England, TW2 7NX

Management Committee

Executive Directors	*Non Executive Directors*
Mrs Emily Fleming (Chair)	Miss Franca Hoffmann
Mr Jeff Goodman	Prof Balazs Szendroi
Mr Chris Clarke	Mr Georg Osang
	Mr Danilo Lewanski

Other members

Alexandra Gessner	Giovanna De Giusti	Michela De Giusti
Amy Fletcher	Iordan Ganev	Monica Mancini
Anda Chisster	James Robson	Nicos Starreveld
Andrew Harris	Joanna De Silva	Oliver Dann
Artur Donaldson	Kelly Pickerill	Pafue Christy Nganjimi
Benjamin Walker	Lily Clements	Peter Hull
Danny Parsons	Livia Mitson	Rachel Knott
David Stern	Mairi Walker	Rafael Sanchez
Esmee te Winkel	Marc Jeannin	Rose Teague
Filippo Mancini	Marta Maggioni	Santiago Maria Borio
Gabriel Diaz-Aylwin	Matteo Levi	Peñaloza
Giacomo Bighin	Matteo Parisi	Sharad Keshari
Gianmarco Bet	Michal Rolinek	Tom Denton

Chair's report

What an exciting year of both strengthened partnership with our previous supporters and extended outreach to our newest partners. In September 2019, we welcomed our two new Non Executive Directors, Georg Osang and Danilo Lewanski who have already made valuable contributions to SAMI as members and dedicated volunteers over the past few years. Their expertise and experience will help allow us to realise our potential for future growth.

Highlights of the year include the official launch of AMI (African Maths Initiative) Ghana, the sister organisation to AMI (Kenya). We look forward to working closely with them in the future. We added three new Maths Camps to the network - Cameroon, Rwanda and our first-ever French speaking Maths camp in Togo.

Our thanks once again to Zach Mbasu and Francis Trogbor who continue to develop our outreach in Kenya and Ghana, respectively and Kossi Amouzouvi for leading the expansion into Togo.

For those who have contributed to our financial support, we remain extremely grateful. We are particularly thankful to the entire community at the Lycee Francais Charles de Gaulle in London for their support in fundraising. Another thank you is owed to St. Peter's College Oxford for their generous support of the Cameroon Maths Camp. Finally, we are pleased to announce our new partnership with IDEMS, a community interest group enabled to offer financial support to SAMI.

More information can be found at www.samicharity.co.uk.
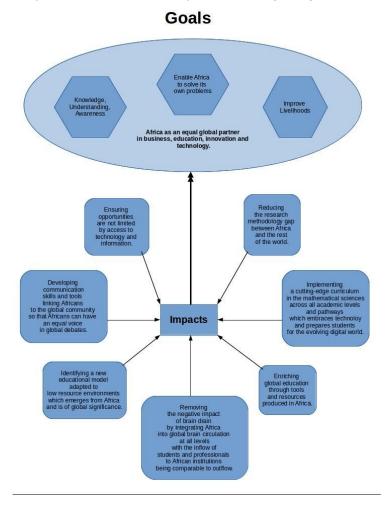

Emily Fleming
Chair

Aims and Objectives

Our charity's objectives as set out in the company's memorandum of association are:

To advance education in mathematics for the public benefit, in particular but not exclusively by:
a) supporting initiatives that promote mathematics and improve the standard of mathematics education in Africa through the provision of advice, funding, consultancy services and volunteers designed to support such initiatives;
b) carrying out research into the effectiveness of new teaching and learning initiatives in mathematics, the useful results of which will be disseminated for public benefit.

Our aims as a charity can be summarised by the following infographic:

Goals

Enable Africa to solve its own problems

Knowledge, Understanding, Awareness

Improve Livelihoods

Africa as an equal global partner in business, education, innovation and technology.

Ensuring opportunities are not limited by access to technology and information.

Reducing the research methodology gap between Africa and the rest of the world.

Developing communication skills and tools linking Africans to the global community so that Africans can have an equal voice in global debates.

Impacts

Implementing a cutting-edge curriculum in the mathematical sciences across all academic levels and pathways which embraces technology and prepares students for the evolving digital world.

Identifying a new educational model adapted to low resource environments which emerges from Africa and is of global significance.

Removing the negative impact of brain drain by integrating Africa into global brain circulation at all levels with the inflow of students and professionals to African institutions being comparable to outflow.

Enriching global education through tools and resources produced in Africa.

Maths Camps in Africa

Allotey Maths Camp, Ghana

25 volunteers from five countries organised the Allotey Maths Camp 2019, hosted at the African Institute for Mathematical Sciences (AIMS) Ghana, Accra. 65 students, including 35 females, attended from 39 junior and senior high schools from across the country, together with a number of students from Ivory Coast and Benin.

Four school teachers came to learn about the Camp and take away practical ideas for their classrooms. This year's camp had themes in Cryptography, Game Theory, Geometry, Mathematical Thinking, Programming and Research, alongside sessions of physical activity, a treasure hunt and teacher training sessions. Students learned how to solve mathematical problems in different ways, including through the use of technology; it was wonderful to see their growing confidence, and how well they learned to work in groups. The research session allowed volunteers to share their research work with the students and gave them insights into how mathematicians can impact the world. A particular high point of the camp was the Scottish country dancing led by Angela, a Ghanaian volunteer who had done her PhD at Glasgow University. The Camp is named in honour of the renowned late Ghanaian mathematician Professor Francis Allotey, who had supported the Ghana Camp since its inception in 2014, as well as the development of mathematics in general across Ghana. Continued local support has been provided by AIMS Ghana.

Bahir Dar Camp, Ethiopia

The seventh edition of the Bahir Dar Maths Camp was held at Bahir Dar University, Ethiopia, over two weeks in mid-July 2019, co-organised with the Mathematics Department. The camp has been financially supported for some years by the University's outreach program, and its past success means it is now firmly established as part of the annual University Calendar. The camp was run by five international volunteers and eight high school teachers and lecturers. There were 50 student participants, one male and one female student representing each of 25 high schools.
General camp themes included Mathematical thinking, Geometry, Population Dynamics, Cryptography and Programming; there was also time for physical activities and a treasure hunt. Evenings were spent in small groups, with students and volunteers playing card and board games for relaxation and to promote open discussion. Meals were shared in a communal hall. A new feature of the Camp was the presence of lecturers and high school teachers camping alongside the high school students, who had a keen interest to learn how to run a Math Camp; a separate training session was held for this group.

Rwanda Camp

Our first Rwanda Math Camp took place in late July 2019, hosted and supported by the African Institute for Mathematical Sciences (AIMS) in Kigali, the capital of Rwanda. Participants included 39 Rwandan high school students, 22 of whom were female, from around the country, as well as 16 Rwandan high school math teachers. The camp was run by a team of eight local and three international volunteers. The first Rwandan Math Olympiad Team training run parallel with our Camp with 23 participants, out of whom six were to be selected to represent their country at international mathematical competitions.

During the week-end before Camp Week, the students participated at several special events: a Run for Science on the Sunday during the car-free day, math busking on the streets, and a Career Event at AIMS with three Rwandese scientists as panelists, to inspire and motivate the students to study science. The Camp math sessions spanned many areas of mathematics; they were designed to treat extra-curricular topics, to provide a student-centered environment with room for experimenting and questioning, and to provide a varied set of problems students can attempt at their own pace. Several sessions contained elements of fun competition between different groups to encourage team spirit and friendship.

Togo Camp

The Togo Camp, our first Camp in a French-speaking environment, was held right on the beach of the Gulf of Guinea, in the coastal town of Aneho, in early August 2019. Our volunteers came from the UK, Germany and Benin, and were complemented by a strong local team. The 38 students were mostly from southern Togo, with five students arriving from Benin. The Camp, unlike most others, took place in a primary school; this low resource environment required a more offline approach. Nevertheless, with tablets borrowed from AMI Ghana and private laptops, computer sessions could still go ahead, a highlight for many of the students.

The themes for the week were Cryptography, Dynamical Systems, Geometry, Special Numbers and Mathematical Thinking. The session on dynamical systems illustrates the approach taken: it started off with games with simple rules, which were then shown to have a real life application in disease modelling; to conclude, teachers shared their research in the field. With a highly motivated volunteer from Benin at the Camp, there is potential for expansion next year; SAMI is engaged in translating existing Math Club material into French to help support the expansion of Clubs to other francophone countries.

Kenya is where ideas leading to SAMI were first conceived, and the location of our original Math Camp in 2011. The 2019 Camp was held in late August 2019 at Manor House Agricultural Centre, Kitale, Western Kenya. 42 students participated at the Camp, including 24 girls, drawn from 36 different schools across the country. Facilitators included four teachers, eleven local and seven international volunteers. The Camp included sessions on Programming, Probability, Optimisation, Graph Theory, Game Theory, as well as puzzles and mathematical games. Students were introduced in particular to mathematical models of conflict and cooperation between intelligent rational decision-makers, in the form of zero-sum games such as prisoner's dilemma. They also experienced the math behind different forms of encryption, concepts in topology and logistical problems such as timetable schedules. All the activities were designed to encourage creativity, problem solving, collaboration skills and communication, as well as to get students to engage with real-world data.

Cameroon Camp

Our first, non-residential Camp in Cameroon was held in late August 2019, hosted at the English-language Pinnacle of Success Academy, Yaounde. It was organised in collaboration with St Peter's College, Oxford. Around 60 high-school students attended the Camp, which was facilitated by four international and nine local volunteers, including local school teachers. The students were divided into four houses, represented by different colours and named after female African mathematicians such as Joséphine Guidy-Wandja, an Ivorian mathematician and the first African woman with a PhD in mathematics. The activities of the camp were organised around the following themes: Shapes and Counting, Maths in Nature, Computer Science, Mathematical Thinking, Physical Activities and Maths in Sign Language.

Supporting AMI work

The Kenyan NGO African Maths Initiatives (AMI) and SAMI have continued to work closely together this year through Zach Mbasu, Patrick Njoroge and Mike Mumbo. After a final year under a stipend from SAMI, the Chairman of AMI, Zach Mbasu, has set up a company called Innodems, carrying on with the educational and statistical work that is his passion. SAMI is looking forward to continuing the relationship with Zach through this new structure.

In the final year under a stipend from SAMI Zach, together with Patrick and Mike, have been involved in many projects, including the ones detailed below. Financial support for this has come from the Stats4SD donation that we were fortunate to receive last year, and the remainder of the Digital Communities Initiative (DCI) budget.

Kongoni Digital Literacy

A network of 10 secondary and 2 primary schools that have collaborated culminating in a 5 day non residential camp from the 16th to the 20th of December 2019. 42 students aged 10 to 13 attended, plus 11 teachers from the network. The themes for the camp were robotics, programming, statistics, geometry and physical activities.

Africa Science Week

A camp was organised by AMI from the 4th - 8th November, 2019 for Africa Science week. This week-long event was supported by Mawazo Institute and Next Einstein Forum(NEF) and showed 70 high school girls, ages 14 - 18 the joys of programming, robotics, data handling with R-Instat and involved lots of mathematical thinking and games.

21st Century Skills Course

In our work in education and research, we have seen schools and universities struggle to adopt meaningful ways to improve 21st-century learning. The skill sets required for current innovators and the workforce is still a missing gap that needs to be filled.

After years of conversations, research, and meaningful collaboration with universities, research institutions, and colleges, AMI collaborated with Manor House Agricultural College and IDEMS International to try to fill the gap. January 2020 saw them offer a month-long Foundational in 21st Century Skills course. One of the major aims was to cultivate skills such as programming, critical and logical thinking, media making, data literacy, and communication among persons of different backgrounds. These students could be young people awaiting to join universities,colleges or self-employment, current university/college students, unemployed youth, or professionals who would want to learn these skills.

They took in 12 students as a start and within a month the young and timid students had grown in remarkable ways. Things did not end there. As part of their capacity building, they took in six of these students as interns in February 2020. This was a chance for the students to work on a Collaborative Group Project on Web Technologies. AMI is very much looking forward to what the next months bring.

Kolibri

It has been an incredibly busy year for part of the AMI team that has been implementing the Kolibri project. Kolibri is an open-source platform that is built to enable seamless authoring and peer-to-peer sharing, and engage users with educational content without the need for the Internet. Learning Equality, an organization which is committed to enabling every person in the world to realize their right to a quality education, has developed this software and through partnership with the organization AMI has been able to set up learning centers in four schools reaching over 4000 students.

African Data Initiative (ADI)

SAMI has continued to support AMI interns in producing a statistical software tool by adapting two existing packages: Instat+ and R. It has been used this year to train lecturers in educational institutions to adopt a more practical approach to statistics training. Maseno University in Kenya has used it for teaching undergraduate courses. AMI and IDEMS have run workshops for professionals on procurement and climatic data.

Happy Classrooms

The project is to deliver 50 'Happy Classrooms' for primary schools in Kenya. Inspired by the incredible initiative of BongoWorldwide in Malawi, we will work with schools to redesign and paint classrooms to be much brighter and full of rich learning resources. Our local and international teams work closely with local teachers, to develop resources and help deliver exciting lessons and promote a joy of learning for all.

Over the past 5 years, we have visited many schools in Kenya. A common sight we see, particularly in rural schools, is bare concrete walls and a lack of classroom resources. The local environment has a huge influence over the ways by which a teacher can teach and a child can learn - an empty room deprives students the potential to learn in many new and exciting ways.

We have worked with local schools, teachers and our international network to design resources, paint classrooms, and provide ongoing support for teachers. We initially ran a pilot project within 5 classrooms across 4 schools and witnessed first-hand the incredible impact a "Happy Classroom" can have.

With over £2000 raised through the Global Giving fundraiser we've raised enough funds for 20 of our goal of 50 classrooms.

Enhancing Maths Education in Primary, Secondary and University Levels

In May 2019, Sam Hyatt Twynam donated £5000 to SAMI to help further maths education. The trustees, together with Zach Mbasu, decided to offer a stipend to two newly qualified teachers in Kenya to work on the project for one year from September 2019 to September 2020. Samuel Okoth Ogalo and Jacob Bwire have been working under the mentorship of Zach Mbasu and Emily Fleming (via Skype each week) and have been learning many new digital and teaching skills.

After five months they have been engaged in successful activities including:
● Orientation of teachers in the project concept and participation
● Promoting students participation in the happy classroom, maths club, maths camps, digital literacy camps and science week program
● Creating model lessons for the happy classroom paintings
● Creating new activities for the maths club pack
● 21st Century Skills Course

SAMI is very grateful to the passion shown by Samuel and Jacob and look forward to their work for the rest of the year.

SAMI Maths Club App

SAMI has gone to large efforts to create a solid collection of resources to engage students with mathematical puzzles and problem solving. Until now these have been distributed on paper and as a pdf in a document known as the 'SAMI Maths Club Pack'. To enhance these efforts further, we have undertaken a project to convert the existing collection and to make accessible via smartphones through the SAMI Maths Club App.

A push from volunteers led to the creation of a number of new puzzles to add to the packs and, in February, the core platform was built and puzzles were added (working with the team in Kenya to support). These were published in March. The goal is to eventually translate the puzzles into other languages starting with French and Kiswahili.

Cross Pollination Workshop

Following a 4000EUR grant from the International Mathematical Union (IMU) in November 2018, SAMI helped coordinate an extremely successful workshop from the 29th of April to the 3rd of May in Ghana with extra funding from IDEMS, AIMS, Franca Hoffman and Danilo Lewanski.

The goal of the workshop was to provide a platform for educators from across the African continent to discuss implementation, sustainability, scalability, impact, good practices and challenges for a range of maths education initiatives. The workshop targeted three different groups:
1. a core team of local and international teachers, scientists, researchers and community leaders, that have long-term involvement in a collaboration of maths education initiatives across the African continent. This collaboration is centered around groups who organize maths camps in different African countries, which constitute one of the key initiatives;
2. invited participants that are in a position to play a key role in initiating, scaling and expanding future initiatives;
3. representatives of Ghana-based organizations with potential to impact the educational landscape of the mathematical sciences in Ghana, such as the Ministry of Education, local NGOs and educational groups.

By bringing these actors together, the goal of this workshop was to achieve cross-pollination of math education initiatives on a wider scale.

42 participants from 11 Countries (Ghana, Kenya, Uganda, Togo, Ethiopia, South Africa, Germany, Italy, USA, Czech Republic and UK) participated at AIMS Ghana Campus, Biriwa, for an intensive 5 days workshop to deliberate on best practices on maths and science education and to share experiences from different countries to promote the study of mathematics in Africa.

The outcomes following the conference have included collaborations across nations on
- Creating automated assessment tools
- Maths camps, maths clubs, maths circles and maths olympiads
- Teacher training
- Using national media to promote mathematical education

Launch of AMI Ghana

Within the context of the workshop, AMI Ghana was officially launched – a sister organisation to the Kenyan NGO, AMI. Having an official organisation means it will be much easier to attract funding and increase the activities in Ghana beyond the summer maths camp.

The AMI Ghana team made a follow up maths club visit to a school called Tema Methodist Day Senior School Campus in April. Two teachers from the school assisted an Allotey Maths Camp volunteer to take the 46 students through a code breaking session. The students had great fun and were yearning for more.

Tema Presec Maths Club was established by AMI Ghana in June 2019 with an afternoon of activities for 71 students. They started by telling the students what Mathematics is all about and some misconceptions about the subject.There were three main themes for the afternoon, namely Mathematical Thinking, Card Tricks and Puzzles.They divided the students into four groups, of which two groups discussed Mathematical Thinking problems. These activities were done in rotation, in which volunteers move from group to group in such a way that every student will have a feel of all the three themes.

AMI Ghana appear on the radio

The program was held on "The Horizon"; a Starr FM morning show with host Francis Abban. The topic was; "Training a Generation of Mathematicians", who would be the next Professor Allotey? They opened the program on their individual background in the field of mathematics discussing how each of them had heard of and got involved in the Allotey Mathematics Camp. What impact mathematics has had in their lives personally was also highlighted. They then moved in to discuss the main topic, misconception of mathematics, and how the abstract nature of mathematics makes students dislike it. They discussed the main purpose of the AMI Ghana organization; how they're trying to bridge the gap between the abstract nature and the practicability of mathematics, how they employ a pragmatic approach to teach mathematics in a fun way. Also about the Allotey Maths Camp, is to help every year to change the misconception about maths being difficult by learning maths in a fun and practicable ways which can be applied in daily activities.

During the maths camp in the summer of 2019, 12 tablets were purchased by SAMI for AMI Ghana for the camp and follow up club activities. 6 were kindly lent to Togo a couple of weeks for their summer camp.

Fundraising

SAMI has been fortunate to receive donations and raise money in many varied ways this year.

Cameroon Camp

A special mention is due to Balazs Szendroi, Pafue Christy Nganjimi and St Peter's College Oxford for fundraising and donating money to the Cameroon camp. Most of the camps SAMI runs are largely funded locally with small donations from SAMI. Fundraising to entirely cover a brand new camp in Cameroon Camp was a new experience for SAMI, with the idea coming from Christy and being fully supported by Balazs. The team in Oxford did a great job to make the camp such a success in its first year.

Pi day March 2019

To celebrate Pi Day, 14 March 2019, the Lycee Francais Charles de Gaulle held a mathematically inspired treasure-hunt. Students donated £2 to participate and were given a series of clues and puzzles to solve. Students from Sixieme to Terminale (Year 7 to Year 13) also participated in the ultimate Pi challenge - which was to recite as many digits of Pi from memory as possible. The winning student went on to recite 489 digits of Pi and the fundraiser took in £688.43 which was then doubled by a private donor.

Maths marathon May 2019

Jeff Goodman, Emily Fleming and Matthew Boswell ran a Maths Marathon at the Lycee Francais Charles de Gaulle on Saturday 4th of May 2019. The idea was to host a revision day for students before their IGCSE exam, but also to raise money for SAMI at the same time. Students were sponsored by their parents to work from 8.30am to 5.30pm on a selection of past papers, targeted topic revision and tailored exercises for grades 5, 7 and 9. A-level students were a great help volunteering their time on the day

Thanks to generous donations from parents £1734 was raised for SAMI and students were given a good kick start to their study leave period.

IDEMS

SAMI has been incredibly lucky this year with both financial and consultancy support from the newly created community interest company IDEMS. The work of IDEMS cuts across a wide range of areas, from agriculture and climate to education and software development. They are passionate about projects related to development, education and the mathematical sciences, and particularly work that impacts more than one of these areas.

The majority of their projects are in Africa and they have experience working in both Anglophone and Francophone areas. They have a strong commitment to building capacity locally wherever we work by involving and supporting local partners whenever we can.

IDEMS has a legal relationship with SAMI. SAMI is mentioned in IDEMS Articles of Association as a specified organisation which IDEMS is able to transfer assets (including money) within its requirements as a community interest company. IDEMS made an extremely generous donation of £3250 to SAMI in 2019 using profits made from their first financial year.

Structure, governance and management

Governing document

SAMI is a charitable company limited by guarantee, incorporated on the 25th of February 2015 and registered as a charity on the 3rd of June 2015.

The company was established under a Memorandum of Association by which it is governed in addition to its Articles of Association, dated 13th of May.

Appointment of Trustees

One third of trustees of SAMI stand down at the following year's AGM. Members and supporters of SAMI are written to in advance of the meeting to ask if anyone would like to be a trustee. New trustees are voted in at the AGM, and trustee positions may include previous trustees, if there is no one else who would like to take over.

Organisation

The board of trustees, with a lot of help from other members, administers the charity. Trustees meet regularly throughout the year, and formally on at least three occasions.

Currently all members are voting members.

Related parties and co-operation with other organisations

Before its incorporation, SAMI was set up after teachers helped at one of the maths camps in Kenya and wanted to extend the good work that was being done by AMI. AMI is a Kenyan NGO that SAMI continues to work with very closely. SAMI and AMI collaborate together on activities and make payments on behalf of each other in the appropriate countries.

Independent examiner's report on the accounts

Report to the trustees/ members of	Charity Name SAMI

On accounts for the year ended	29th February 2020	**Charity no**	1161994

I report to the trustees on my examination of the accounts of the above charity ("the Trust") for the year ended 29 / 02 / 2020.

Responsibilities and basis of report

As the charity's trustees, you are responsible for the preparation of the accounts in accordance with the requirements of the Charities Act 2011 ("the Act").

I report in respect of my examination of the Trust's accounts carried out under section 145 of the 2011 Act and in carrying out my examination, I have followed all the applicable Directions given by the Charity Commission under section 145(5)(b) of the Act.

Independent examiner's statement

I have completed my examination. I confirm that no material matters have come to my attention in connection with the examination which gives me cause to believe that in, any material respect:
- the accounting records were not kept in accordance with section 130 of the Charities Act
- the accounts did not accord with the accounting records

I have no concerns and have come across no other matters in connection with the examination to which attention should be drawn in this report in order to enable a proper understanding of the accounts to be reached.

Signed:	*John S. Haagensen*	**Date:**	29/12/2020

Name:	John Switzer Haagensen

Relevant professional qualification(s) or body (if any):	

Address:	304 Laleham Road
	Shepperton
	TW17 OJQ, UK

Statement of financial activities

Statement of financial activities (incorporating Income and Expenditure account)
For the period ended 29th February 2020.

The Statement of Financial Activities show a positive net movement in funds for the year of £9,009.

Reserves policy

We don't have premises to run or any overheads, but we are committed to keeping a core set of projects running in Kenya. We would like to build up a reserve of 6 months of one full time stipend and one part time stipend, so £6000.

We aim to allocate 10% of our bank account at the end of each year to build up this reserve. For next year we can therefore set aside £351. Reserves can be allocated to charitable activities at the end of the financial year if the reserves are above the amount outlined. Reserves may only be used in exceptional circumstances if all executive directors agree.

This policy is reviewed on an annual basis at the time of our annual report.

Our policies require that requests for funding of projects come in writing and any expenditure must be approved by the Trustees. These requests are reviewed in line with our objectives, with our current financial situation and our risk management policy. The Trustees assess the likely risks to which the charity is exposed, in particular including those related to the operations and finances of the charity, and are satisfied that systems are in place to mitigate our exposure to the major risks.

Income

	Unrestricted funds (£)	Restricted funds (£)	Total 2020(£)
Donations			
Personal fundraising and donations	4,023	-	4,023
Benevity donation	46	-	46
IDEMS	3,250		3,250
IDEMS donation for ADI	-	5,750	5,750
Happy Classrooms	-	2,948	2,948
Cameroon	-	3,945	3,945
Sam Hyatt-Twynam	-	5,000	5,000
Cross Pollination	-	1,937	1,937
Global giving foundation	223	-	223
Argus	-	2,500	2,500
Charitable activities			
Maths marathon	1,784	-	1,784
Pi Day	198	-	198
Other trading activities			
Donations for used corks	71	-	71
Using EasyFundraising online	161	-	161
Paypal Giving Fund	27	-	27
Amazon Smile	22	-	22
Total incoming resources	**9,805**	**22,080**	**31,885**

Statement of financial activities (incorporating Income and Expenditure account) - continued
For the period ended 29th February 2020.

Expenditure

	Unrestricted funds (£)	Restricted funds(£)	Total 2020(£)
Cost of generating funds			
London Bike place	114	-	114
Posting corks	6	-	6
Website admin	53	-	53
Charitable activities			
Maths Camps in Africa	1,614	-	1,614
Supporting AMI work	8,943	-	8,943
African Data Initiative	-	5,750	5,750
Digital Communities Initiatives	-	4,141	4,141
Stats4sd	-	2,012	2,012
Maths Club Ghana	433	-	433
Cameroon	-	3,945	3,945
Happy Classrooms	-	923	923
Sam Hyatt-Twynam	-	1,554	1,554
Cross Pollination	-	7,014	7,014
SAMI App	2,000	-	2,000
Maths Club Togo	190	-	190
Governance costs -companies house registration	13	-	13
Total expended resources	**13,366**	**25,339**	**38,705**

Net income/expenditure and net movement in funds	-3,561	-3,259	-6,820
Funds brought forward	4,573	11,256	15,829
Funds carried forward	**1,012**	**7,997**	**9,009**

Balance Sheet as of 29th February 2020

	Total funds 2020 (£)
Current assets:	
Debtors	0
Cash at bank and in hand	9,009
Total current assets	9,009
Creditors: Amounts falling due within one year	0
Net current assets or liabilities	9,009
Total net assets	9,009
Reserves	
Unrestricted funds	1,012
Restricted funds	7,997
	9,009

For the period ended 29 February 2020 the company was entitled to an exemption from the requirement to have an audit under the provisions of section 477 of the Companies Act 2006. No notice has been deposited with the company under section 476 of the Companies Act 2006 requiring an audit to be carried out.

The directors acknowledge their responsibility for:

(i) ensuring the company keeps accounting records which comply with sections 386 and 387 of the Companies Act 2006; and

(ii) preparing financial statements which give a true and fair view of the state of affairs of the company as at the end of the financial year, and of its surplus or deficit for that financial year in accordance with the requirements of sections 394 and 395 of the Companies Act 2006.

These accounts have been prepared in accordance with the provisions applicable to companies subject to the small companies regime within Part 15 of the Companies Act 2006 and the Financial Reporting Standard for Smaller Entities (effective January 2015).

Approved and authorised for issue by the Directors on 29th December 2020 and signed on their behalf by:

Signed:

Name: Emily Fleming (director)

Signed:

Name: Jeff Goodman (director)

Notes to the Accounts

1.Accounting policies

Basis of Accounting

The financial statements have been prepared under the historical cost convention. They are in accordance with accepting accounting standards in the United Kingdom and comply with the provisions of The Charities Act 2011 and Reporting by Charities: Statement of Recommended Practice applicable to charities preparing their accounts in accordance with the Charities SORP (FRS 102).

Income Recognition

Donations and other income are accounted for when receivable by the charity. Investment income including bank interest is accounted for on an accrual basis.

Expenditure Recognition

The charity is not registered for VAT and accordingly expenditure is gross of irrecoverable VAT.

Charitable expenditure comprises donations to beneficiaries and related administration costs. Donations to beneficiaries are recognised when a constructive obligation arises that result in the payment being unavoidable.

Governance costs include those costs associated with meeting the constitutional and statutory requirements of the charity and include the costs linked to the strategic management of the charity.
Funds held by the charity are:

Unrestricted funds
These are the funds that can be used in accordance with the charitable objectives at the discretion of the directors.

Restricted funds
These can be funds that can only be used for particular restricted purposes within the objectives of the charity. Restrictions arise when specified by the donor or when funds are raised for particular restricted purposes.

Notes to the accounts (continued)
For the period ended 29 February 2020

2.Breakdown of expenditure on Charitable Activities

Expenditure (Unrestricted)	Maths camps in Africa (£)	Supporting AMI work (£)	Maths Club Ghana (£)	Maths Club Togo (£)	SAMI App (£)	Total (£)
Costs directly allocated to Charitable activities						
Stipends	-	7,515	-	186	-	7,701
Flights	606	-	-	-	-	606
Food, accommodation, transport and resources for students and local teachers	686	-	-	-	-	686
Technology	322	1,279	433	-	-	2,034
Digital subscriptions	-	80	-	-	-	80
Development of SAMI Maths Club app	-	-	-	-	2,000	2,000
Support costs allocated to Charitable activities						
Foreign transfer bank fees	-	69	-	4	-	73
Total expended funds (unrestricted)	**1,614**	**8,943**	**433**	**190**	**2,000**	**13,180**

Notes to the accounts (continued)
For the period ended 29 February 2020

3. Breakdown of expenditure on Charitable Activities (continued)

Expenditure (Restricted)	ADI (£)	DCI (£)	Cameroon (£)	Stats4SD (£)	Sam Hyatt-Twynam (£)	Cross Pollination (£)	Happy Classrooms (£)	Total (£)
Costs directly allocated to Charitable activities								
Stipends	5,703	3,922	-	1,991	1,522	-	-	13,138
Technology	-	155	-	-	-	-	-	155
Digital subscriptions	-	28	-	-	-	-	-	28
Supporting volunteers running the Cameroon camp	-		1,706	-	-	-	-	1,706
Food, accommodation, transport and resources for students and local teachers	-	-	2,197	-	-	-	-	2,197
Flights and visas for Cross Pollination conference	-	-	-	-	-	5,547	-	5,547
Accomodation for Cross Pollination conference	-	-	-	-	-	1,383	-	1,383
Labour and supplies for Happy Classrooms	-	-	-	-	-	-	911	911
Support costs allocated to Charitable activities								
Bank charges	47	36	42	21	32	84	12	274
Total expended funds (restricted)	**5,750**	**4,141**	**3,945**	**2,012**	**1,554**	**7,014**	**923**	**25,339**

Notes to the accounts (continued)
For the period ended 29 February 2020

3. Funds

	At 28 Feb 2019	Income	Expenditure	At 29 Feb 2020
Unrestricted funds				
General funds	4,573	9,805	(13,366)	1,012
Total unrestricted	4,573	9,805	(13,366)	1,012
Restricted funds				
African Data Initiative	0	5,750	(5,750)	0
DCI	4,141	0	(4,141)	0
Stats4sd	3,600	0	(2,012)	1,588
Cross Pollination	3,515	1,937	(7,014)	-1,562
Cameroon	0	3,945	(3,945)	0
Sam Hyatt-Twynam	0	5,000	(1,554)	3,446
Happy Classrooms	0	2,948	(923)	2025
Argus	0	2,500	(0)	2500
Total restricted	11,256	22,080	(25,339)	7,997
Total funds	£15,829	£31,885	£ (38,705)	£9,009

Details of restricted funds

African Data Initiative

Funds received to support the ADI project to address the problem of statistical literacy in Africa and beyond.

Digital Communities Initiative

Funds received to help to enable both children and adults in rural Kenya to work towards a better future, through integration of digital technology into key life activities.

Stats4sd

Funds received to support projects in Africa.

Cross Pollination

Grant received to enable facilitators at different maths camps in Africa to get together to share best practice.

Sam Hyatt-Twynam

Donation received to improve maths education in Kenya through teachers.

Cameroon

Fundraising for running the Cameroon maths camp, with any spare money to be distributed to other camps

4. Trustee remuneration

None of the directors (trustees) received remuneration or expenses during the period.

Appendix 1

Explanation of key words and phrases used in the infographic

- All academic levels – primary school all the way up to PhD and beyond. If activities are not designed with the scope of creating PhD holders then whatever change is attempted lower down (e.g. primary schools) could be undermined by people with higher qualifications but less knowledge.
- All pathways – maths for mathematicians, maths for scientists, maths literacy, vocational, other professions and walks of life.This is very important as a concept, because most people specialise, but particularly in the African context it is important and constructive to see this as a whole. We won't be constrained by thinking about one particular strain, we can turn this into an advantage and perhaps Africa can become an equal partner by taking on some of these bigger picture solutions because everyone else is looking at a smaller level.
- Brain drain – The intellectual elite are integrating and migrating into the global system due to better pay and employment opportunities, however in developing countries, the local system cannot afford to lose them. (In some small countries, losing individuals as a result of brain drain is a problem. For example, in the case of Madagascar, graduates did not want to return to their country as they would face academic isolation. Alternatively, when individuals do not leave this can result in people developing in isolation, which can also be problematic. In some instances brain drain can be beneficial, as those individuals who choose to return after going away share their knowledge and skills with the local population.)
- Brain circulation – There is a need to improve the system by improving the circulation of people into the system, there are opportunities for dynamic individuals.
- Low resource environment - aims to dispel the myth that low resource environment means no access to technology, problem solving, extra curricular. Many low resource environments have time in abundance to do extra activities. Thinking about Kenya and South Africa, there are large chunks of the school day where pupils are waiting or simply having their time filled without much of an educational purpose. There is no way to create enough good skilled teachers to have a good teacher to pupil ratio. That is the essence of a low resource environment. But this lends itself to technology based approaches. At some stage the technology will need to be a tool to help pupil based learning activities. Modern day technology can now provide feedback which is the revelation. A myth of low resource environment is that there is no funding. But actually governments do invest in education, but often the money is not spent wisely. The maths camp in Maseno in 2014 broke even on local funds. Another myth is that extra-curricular is a luxury, but it is actually easy and does exist in Africa.
- Educational model - The concepts, ideals and values behind the educational system. A model that has the values of formative assessment and feedback. An educational model encompasses concepts, the what and the why, the role of school, the aim of education,

the teacher-student role. The educational model stands for the concepts without the implementation. Research methodology gap - The research methods used throughout Africa for most areas of research from universities to professionals are the same methods as were used in the 1960s. Now we have big data and large data sets. People in e.g. Agriculture and medicine, are taught statistics as a service subject. Tools they are taught and the tools that are available are from the 1960s. There has been an explosion in tools and data that are available. These make the research much easier.The tools used by global research are growing exponentially. The gap in terms of the methodologies used has been getting worse and worse. Difficult to overstate the size of this problem. Pretty much all the money spent on agricultural research in Africa is wasted due to this problem.

Appendix 2

Underlying Dimensions: Situational constraints and choices

Before considering how we hope to move towards the high level outcomes via a lower tier of activities, outputs and outcomes it is important to discuss some of the dimensions that may constrain or guide us. We will start by discussing those we view as imposed by choosing to work in an African context and can be chosen to be seen from positive or negative perspectives.

Young/Old Demographic
Africa has the world's youngest population which could be its greatest asset or greatest threat. For example, we could not begin to think that in the future there will be anywhere near enough highly trained and skilled teachers to teach all of Africa's youth, and therefore we cannot consider anything that would depend on this fact.

Individuals/Institutions
Individuals have large amounts of responsibility and influence. They can really make a difference. This has some clear negative connotations when considering issues such as corruption, however this can also be turned into a strength given the ability for these individuals to provide information and communicate between a much wider target audience. An example might be the importance of formative feedback being pushed within school and university contexts by the same small groups of individuals who have a great deal of influence within both contexts.

Demand/Supply-Driven Change
Change is driven by demand. There is potential for large-scale systematic reforms.

Low/High Resource Environments
Working in low resource environments is challenging, but has the potential to impact universally. One might argue that the diversity of Africa does indeed provide a number of high resource environments (strong-performing private schools for example, akin to many of those in Western countries), however we could not possibly feel justified focusing within this specific domain and claiming it representative of wider Africa. It is clear by example that if you were to create a set of resources that helped young children fundamentally grasp concepts through 1:1 student-teacher interactions, this model could not then be transferred into a situation where the ratio may in fact be 1:50. If however we take the converse and find something that works within a 1:50 environment then it will hold many of the same benefits when implemented back in our initial high resource environment.

Whilst the previous dimensional *choices* are already made through the decision to work within the wider African context, there are still numerous further dimensions where choices have to be made. We have identified the following 4 pairs as significant for what we want to achieve:

Top-down *Bottom up*
Adaptive *Disruptive*

Formal *Informal*

Content *Implementation*

These dimensions all have the ability to drastically change the appearance and nature of an initiative. If we were to just take 2 we could represent such choices and outcomes by the following diagram:

	Adaptive	Disruptive
Formal	Improving current school curricula to include problem solving	Completely replacing current school curricula to take a different approach
Informal	Build on existing community literacy programs	Create a new set of microworlds that enable education to become a core component of daily life

We would assert that when considering how to move in the direction of our proposed outcomes, it is important to consider how it is possible to provide progress across all dimensions in which we have choices; from grassroots initiatives to government-backed schemes, building on work which has already been done, as well as bringing in completely fresh and new ideas, influencing within defined instructional institutions as well as anywhere else learning can take place. We could see how these different approaches could all potentially add value and move towards a specific long term outcome.

Appendix 3
Key values

- **Sustainability:** From its inception, the first maths camp - the Maseno Maths Camp - was an initiative instigated and supported by lecturers at Maseno University as a locally sustainable initiative. All camps are not-for-profit ventures, with local and international educators volunteering their time freely. In 2014, the Maseno Maths Camp was able to run with all local expenses covered by student registration fees. Full fees for the week including accommodation and food are 5000 Kenyan Shillings (around $60) with a large number of local students paying reduced fees. There is a similar scenario in the Ghana maths camp, and in Ethiopia the students are funded from the university budget. Volunteers at the camps include a mix of local and international mathematics students, teachers, educators, lecturers, academics, researchers, PhD students and mathematics enthusiasts, a mix designed to maintain engagement of participants whilst ensuring that the event does not rely on any given individual. Exceptional participants are encouraged to become volunteers and are mentored into a new role once they finish school.

- **Extra-curricular mathematics:** The camps are designed to open students' eyes to the world of mathematics and show that mathematics is not all about calculations. The aim is to introduce mathematics not found in a classroom, both through the choice of content and through the delivery of the subject material. Each camp focuses on five or six different "themes" in mathematics, such as modelling, combinatorics, programming, code breaking, statistics, non-Euclidean geometry and game theory. Whatever the theme, the focus is on understanding concepts and problem solving situations, very different from the calculation and formula emphasis students experience at school. Moreover, the organisers believe in making high level mathematics accessible to high school students. Even though the camps are not tailored to help students with the mathematics covered in the school curriculum, students often find that their achievements in mathematics improve on their return to school, and even see improvements in other subjects. The case studies of Cabrine and Evans, in our research paper for EDULEARN, illustrate this point even if they are exceptional rather than representative students.

- **Inclusive:** All high school students (aged roughly 14 to 18) are welcome to attend the camps. There are no entry requirements and the camps aim to have a mix of pupils with different socio-economic backgrounds and different achievements so far in maths. Equal numbers of boys and girls at the camps is a target, with a good mix every year so far, and there is a maximum number of students from any one individual school to ensure that a variety of schools are represented. Many students come from local public schools, but private and national schools are also represented. Students are not separated by any of these factors during sessions at the camps and despite the wide range in ages, schools, backgrounds and mathematical ability of students who attend the camps, this has never caused an issue. The focus at the camps is not on the facts and formulas memorised in school but on critical thinking, creativity and being logical and persistent in solving puzzles and problems, so any student can succeed at the camp by applying themselves.

- **Everyone Learns:** The camp is set up to allow learning opportunities for everyone, not just the students attending. Local university student volunteers learn ideas applicable to their university maths clubs and get valuable new input to their studies. They meet and work alongside local and international lecturers, teachers and PhD students and integrate themselves into a wider professional network. Teachers who accompany their students are given a few separate sessions to discuss what they have observed and learned from the sessions, how they could take this back to their classrooms and how they can receive support from the organisers in doing so. In general, teachers attend the sessions together with the students and learn alongside them. Local and international teachers have the opportunity to interact with mathematics lecturers and researchers and learn new academic depth and background to the material they teach at school level. Local lecturers and teachers see a different style of teaching in action. Volunteers learn new branches of mathematics from being involved in a dynamic group with different specialisms. Mathematics researchers gain hands-on teaching experience alongside experienced teachers and receive feedback on their input. Thanks to this sharing of expertise across all levels the maths camps have been attracting enthusiastic and skilled volunteers consistently over the years, facilitating the smooth running of the camps.

- **Technology:** Technology plays a key role in the camps. Software such as Geogebra and Scratch are used to give students an opportunity to explore mathematics and programming in an interactive environment. Many students have not used a computer before; but rather than teach them how to use a computer, mathematical activities are designed which will allow them to learn how the computer works at the same time as doing the maths. Whenever possible free open source software is used and all the resources that the students are exposed to are given to them at the end of the week on a DVD.

- **Development of New Educational Material:** Each camp week is preceded by a preparation week where local and international organisers and volunteers get together to prepare the maths camp. This model has proven to be very successful given the challenge of organising such an event with facilitators being engaged in other full-time work both locally and abroad. The preparation week does not only serve as a training for local and international volunteers and as important team building in preparation for the camp week, allowing to share expertise, to learn new mathematics and to explore new teaching methods, it is also a valuable opportunity to create new educational material. This is where new ideas and concepts are developed and tested with local and international partners working together on a tight deadline. Since 2011 a large number of resources have been created, both within and outside the preparation week, that are now more widely available. A secondary aim of the preparation week, in the last few years, has been to develop and improve the Maths Camp Starter Pack, a collection of mathematics resources that can be used by students, teachers, academics and interested individuals to run a similar event independently, be it for a half-day or a full week.

- **Immersive environment:** Students are immersed in mathematics throughout the whole week. The structure of the camp is designed to make time for physical activities and card games. Links between card games and mathematics are highlighted and physical

activities are chosen carefully to involve teamwork, critical thinking and logic. It is a core belief of the camps that mathematics can be learnt through games. Students work in pairs and groups throughout the week to encourage mathematical discussion. There are puzzles of the day which students work on during their free time, and the computer labs are open outside formal sessions so that students are given the opportunity to explore the programmes they have been introduced to independently.

- **Community:** Students enjoy the opportunity to meet peers from other schools and to interact with local and international students, teachers, lecturers and researchers. Breakfasts, lunches and dinners are all taken together; these and other activities outside of lessons create a good working relationship between all camp participants. They help create an environment that breaks through the traditional hierarchies in educational institutions and gives mental space for critical thinking, allowing to challenge each other and learn from each other across all academic levels and backgrounds. A key value of the camps is that there are no barriers between students and facilitators, there are interactions between everyone and everyone has a voice. This sense of community builds with a few students returning year after year, in some cases even becoming volunteers after they leave school. Students are keen to share what they have learned on their return home, and almost universally state an enjoyment of mathematics when leaving the camp. This is a small but important step towards creating a community of individuals enthusiastic about mathematical ideas, and eager to embrace mathematical concepts in their future endeavours.