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Digital Schools Sessions Evaluation Report

DIGITAL SESSIONS NOVEMBER 2020-JANUARY 2021

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Introduction

National Museums Scotland established a new programme of Digital Schools Sessions in November 2020 to engage directly with schools whilst they were unable to visit in person. These sessions are live, broadcast events hosted by the Enabler team, and are delivered using Microsoft Teams Live Events. Teachers sign up to take part with their classes through Eventbrite and are sent a link to the event, as well as pre and post activities on the same topic. Ten to fifteen classes take part in each session.

Between November-December, National Museums Scotland delivered the following:

- Second World War: Meet the Pilot x 6 sessions
- The Romans x 4 sessions
- Dinosaurs! x 9 sessions
- Ancient Egypt: Mummification and the Afterlife x 3 sessions

In addition, in January whilst schools were closed, National Museums Scotland piloted sending pre-recorded sessions to teachers who had booked for live sessions on the topics of Second World War and Biodiversity.

The digital sessions were very popular, with all available slots across all topics being fully booked within 48 hours.

Additional information about the Digital Schools Sessions can be found here:

<https://www.nms.ac.uk/about-us/schools/school-visits/digital-schools-sessions/>

About this report

The goals of this report are to evaluate the success of these digital school sessions by collating data across different sources of evidence and feedback, and to provide recommendations for the future.

This report reviews data from a variety of sources, including:

- Booking details for each live session
- Results from the post-session teacher survey (using SurveyMonkey)
- Attendee reports from each live session
- Q&A text from each live session
- Emails to the schools team from teachers/classes who have taken part
- Twitter engagement with @NMSEngage Twitter account, or tweets mentioning the sessions
- Comparison with data about in-person school visits in previous years

General Findings

High levels of engagement with the digital school sessions were demonstrated across a variety of measures, including:

- The speed at which sessions were fully booked,
- The number of enthusiastic comments and questions entered into the chat during each session,
- Teachers' reports of high levels of pupil engagement,
- Teachers' frequent use of the pre-session and post-session follow-up activities, and
- Positive feedback via survey responses, emails, and Twitter engagement.

Digital sessions attracted new audiences and provided opportunities for pupils and teachers from schools across Scotland to interact with National Museums Scotland in ways not previously possible due to geographic or financial constraints.

Providing digital sessions has created opportunities for National Museums Scotland to meet Impact Framework General outcomes, including:

- Participants developing new knowledge through interaction with Museum collections and resources,
- Participants enjoying and being enriched by the sessions,
- Innovation in how Museum collections can be shared digitally and used to encourage future in-person visits,
- A broader range of people being able to engage with heritage, and
- A reduction in inequality through greater accessibility and opportunity for diverse audiences.

Recommendations for the future include:

- Continuing efforts to support schools from areas of mid- to high-deprivation and those who are unable to travel to National Museums Scotland due to distance or financial limitations
- Expanding opportunities for valuable interaction and Q&A between pupils and museum staff
- Collecting feedback from pupils themselves about digital sessions
- Evaluation of both pupil and teacher preferences for live broadcast sessions versus pre-recorded sessions, including consideration of trade-offs regarding engagement, flexibility, accessibility, and interaction



Part 1: Summary of Key Data

Over 8,500 pupils and 450 adults from more than 200 different schools were included in the bookings for the live and pre-recorded digital sessions in November 2020, December 2020, and January 2021.

Numbers of participants reached (based on bookings):

	Pupils	Adults	Total Participants
Ancient Egypt (live digital sessions)	1098	53	1151
Dinosaurs (live digital sessions)	3154	175	3329
The Romans (live digital sessions)	1493	78	1571
Second World War (live digital sessions)	1780	82	1862
Biodiversity (pre-recorded)	458	34	492
Second World War (pre-recorded)	551	35	586
Live digital sessions	7525	388	7913
Pre-recorded digital sessions	1009	69	1078
Overall	8534	457	8991

Number of schools who booked a session (or sessions):

Ancient Egypt (live digital sessions)	31
Dinosaurs (live digital sessions)	83
The Romans (live digital sessions)	39
Second World War (live digital sessions)	49
Biodiversity (pre-recorded)	19
Second World War (pre-recorded)	16
Live digital sessions	182
Pre-recorded digital sessions	31
Overall	202

The majority of classes booked for the sessions were from primary schools, with P4 classes and P7 classes representing the two largest age groups in the bookings. The bookings also included a variety of mixed year groups, either from composite classes, or schools with small enrolments.

Age groups for each of the different types of sessions are listed in **Appendix A**.

Age groups represented in bookings:

Class/Age	Bookings for Live sessions	Bookings for Pre-recorded sessions	Overall digital sessions bookings
P1	11	0	11

P1, P2	5	0	5
P1-P3	8	0	8
P1-P3 ASN	1	0	1
P1-P4	4	0	4
P1-P7	1	0	1
P2	44	0	44
P2, P3	18	0	18
P2-P5 ASN	1	0	1
P2, P4, P6	1	1	2
P2-P6	1	1	2
P3	48	0	48
P3, P4	20	0	20
P3-P5	1	0	1
P4	56	1	57
P4, P5	3	2	5
P4-P6	2	1	3
P4-P7	1	3	4
P5	14	3	17
P5, P6	1	1	2
P5-P7	1	4	5
P6	15	4	19
P6, P7	5	3	8
P7	50	21	71
S1	0	2	2
S3	1	0	1
Year 6	1	0	1
TOTAL	314	47	361

Digital sessions were booked by schools across 27 of the 32 local authority areas in Scotland, and one school located in Wales. The local authorities without any bookings were: Argyll and Bute, Eilean Siar, Inverclyde, Orkney Islands, and Shetland Islands.

Local authority areas reached:

Local Authority	Number of Bookings (Live sessions)	Number of Bookings (Pre-recorded sessions)	Overall digital session bookings
Aberdeen City	5	0	5
Aberdeenshire	8	1	9
Angus	6	2	8
Argyll and Bute	0	0	0
Clackmannanshire	1	2	3
Dumfries and Galloway	4	0	4

Dundee City	2	0	2
East Ayrshire	11	0	11
East Dunbartonshire	5	0	5
East Lothian	21	1	22
East Renfrewshire	11	0	11
Edinburgh, City of	42	11	53
Eilean Siar	0	0	0
Falkirk	22	0	22
Fife	17	7	24
Glasgow City	19	0	19
Highland	16	6	22
Inverclyde	0	0	0
Midlothian	12	2	14
Moray	2	2	4
North Ayrshire	13	0	13
North Lanarkshire	18	0	18
Orkney Islands	0	0	0
Perth and Kinross	12	1	13
Renfrewshire	15	0	15
Scottish Borders	3	0	3
Shetland Islands	0	0	0
South Ayrshire	8	2	10
South Lanarkshire	20	4	24
Stirling	4	1	5
West Dunbartonshire	1	0	1
West Lothian	13	5	18
Other (e.g., Wales)	1	0	1
TOTAL	312	47	359

Local authority area bookings for each session type:

	Ancient Egypt (live)	Dinosaurs! (live)	The Romans (live)	Second World War (live)	Biodiversity (pre-rec)	Second World War (pre-rec)
Aberdeen City	0	3	2	0	0	0
Aberdeenshire	1	4	1	2	0	1
Angus	0	3	0	3	0	2
Argyll and Bute	0	0	0	0	0	0
Clackmannanshire	0	1	0	0	1	1
Dumfries and Galloway	1	2	1	0	0	0
Dundee City	2	0	0	0	0	0
East Ayrshire	2	7	2	0	0	0
East Dunbartonshire	1	2	1	1	0	0

East Lothian	0	9	3	9	1	0
East Renfrewshire	0	7	4	0	0	0
Edinburgh, City of	0	24	5	13	2	9
Eilean Siar	0	0	0	0	0	0
Falkirk	1	10	7	4	0	0
Fife	2	8	3	4	6	1
Glasgow City	2	7	4	6	0	0
Highland	2	11	1	2	3	3
Inverclyde	0	0	0	0	0	0
Midlothian	7	3	0	2	2	0
Moray	0	0	1	1	2	0
North Ayrshire	5	2	3	3	0	0
North Lanarkshire	4	5	8	1	0	0
Orkney Islands	0	0	0	0	0	0
Perth and Kinross	4	7	1	0	1	0
Renfrewshire	2	5	1	7	0	0
Scottish Borders	1	1	1	0	0	0
Shetland Islands	0	0	0	0	0	0
South Ayrshire	4	0	2	2	2	0
South Lanarkshire	3	12	5	0	1	3
Stirling	2	0	1	1	0	1
West Dunbartonshire	0	0	1	0	0	0
West Lothian	0	2	3	8	3	2
Other (e.g., Wales)	0	0	0	1	0	0
Total	46	135	61	70	24	23

Comparison of Digital Sessions and Previous In-Person Sessions

Comparing bookings this year to the previous school year at the National Museum of Scotland (NMoS) in Edinburgh¹, offering digital sessions has shifted the relative proportions of schools engaging from different local authority areas across Scotland. **Local authorities with larger numbers of digital bookings than the previous year's in-person bookings are highlighted in green in the table below.**

Most notably, whereas no schools from North Ayrshire booked in-person sessions at NMoS last year, this year there were 13 digital session bookings from schools in that local authority area.

Local authority areas represented in bookings for in-person sessions (2019-20)² at NMoS versus digital sessions (2020-21):

¹ See page 42 for details about National Museum of Flight, National Museum of War and National Museum of Rural Life figures for visiting in person not included in this report, as Digital sessions did not focus on collections or were delivered from either site.

² Note that in-person bookings during 2019-20 were impacted by the COVID Pandemic and may not have been representative of the range of schools who visited in previous academic years

	Number of booked sessions 2019/20	% booked sessions 2019/20	Digital session bookings 2020/21	% booked digital sessions 2020/21
Aberdeen City	1	<1%	5	2%
Aberdeenshire	7	1%	8	3%
Angus	7	1%	6	2%
Argyll and Bute	3	<1%	0	0%
Clackmannanshire	12	2%	1	<1%
Dumfries and Galloway	13	2%	4	1%
Dundee City	6	1%	2	1%
East Ayrshire	1	<1%	11	4%
East Dunbartonshire	5	1%	5	2%
East Lothian	43	7%	21	7%
East Renfrewshire	5	1%	11	4%
Edinburgh, City of	272	42%	42	13%
Eilean Siar	2	<1%	0	0%
Falkirk	13	2%	22	7%
Fife	56	9%	17	5%
Glasgow City	14	2%	19	6%
Highland	18	3%	16	5%
Inverclyde	3	<1%	0	0%
Midlothian	34	5%	12	4%
Moray	2	<1%	2	1%
North Ayrshire	0	0%	13	4%
North Lanarkshire	27	4%	18	6%
Orkney Islands	0	0%	0	0%
Perth and Kinross	7	1%	12	4%
Renfrewshire	4	1%	15	5%
Scottish Borders	20	3%	3	1%
Shetland Islands	0	0%	0	0%
South Ayrshire	2	<1%	8	3%
South Lanarkshire	16	2%	20	6%
Stirling	12	2%	4	1%
West Dunbartonshire	1	<1%	1	<1%
West Lothian	36	6%	13	4%
Other (e.g., Wales)	0	0%	1	<1%
TOTAL	642		312	

Bookings for digital sessions this year also showed differences from the previous year in the number of schools booked from different SIMD datazones. Even with fewer digital sessions being offered compared to in-person sessions thus far this school year, there are still more

schools booking from the two highest categories of deprivation (see table below) in comparison to the previous year.

Proportion of pupils who live in 20% most deprived datazones in Scotland	Booked sessions 2019/20	Booked digital sessions 2020/21
0%	101	49
0 - <5%		62
5 - <10%	59	23
10 - <15%	39	34
15 - <20%	33	19
20 - <25%	30	26
25 - <30%	23	12
30 - <35%	14	2
35 - <40%	18	6
40 - <45%	12	3
45 - <50%	16	14
50 - <55%	12	11
55 - <60%	11	3
60 - <65%	5	7
65 - <70%	10	5
70 - <75%	16	1
75 - <80%	10	3
80 - <85%	6	4
85 - <90%	4	5
90 - <95%	2	7
95%+	0	0
*	-	49
N/A	-	14
TOTAL	421	359

The provision of free, digital programming appears to have increased accessibility for attending museum sessions to those living in areas with the highest levels of deprivation. However, support is likely still needed to make sure teachers know about these sessions and have the information technology resources in order to be able to access them.

% of Pupils who live in the 20% most deprived datazones in Scotland	% Sessions 17/18	% Sessions 18/19	% Booked sessions 19/20	% Digital session bookings 20/21
0%-<25% of pupils	64%	59%	62%	72%
25%-<50% of pupils	22%	22%	20%	13%

50%- <75% of pupils	8%	14%	13%	9%
75%-<100% of pupils	5%	5%	5%	6%

Part 2: Survey Data Summary

This section provides details from the Survey Monkey online survey sent to teachers after their classes' participation in a digital session. More in-depth interpretation of this data can be found in Part 3 of this report.

Q3-7: Which session did you take part in?

Survey respondents included at least one teacher from 19 of the 22 live digital sessions. None of the participants from the pre-recorded digital sessions completed the survey.

Session	Date/time	Number of Survey Respondents
Ancient Egypt: Mummification and the Afterlife	19 November 2020, 11:30	2
	2 December 2020, 11:30	1
	2 December 2020, 13:30	5
	Ancient Egypt Total	8
Dinosaurs!	12 November 2020 10:30	0
	12 November 2020 11:30	2
	12 November 2020 13:30	0
	26 November 2020 10:30	2
	26 November 2020 11:30	3
	26 November 2020 13:30	3
	3 December 2020 10:30	1
	3 December 2020 11:30	2
	3 December 2020 13:30	3
	Dinosaurs Total	16
Second World War: Meet the Pilot	10 November 11:30	1
	10 November 13:30	0
	11 November 11:30	2
	11 November 13:30	3
	24 November 11:30	4
	24 November 13:30	4
	Second World War Total	14
The Romans	1 December 2020, 11:30	2
	1 December 2020, 13:30	1
	8 December 2020, 11:30	3
	8 December 2020, 13:30	1
	Romans Total	7
Biodiversity: Life in Scotland (pre-recorded)		0
Second World War: Meet the Pilot (pre-recorded)		0

Pre-recorded Total	0
OVERALL TOTAL	45

Q8: Which local authority area is your school based in?

The 45 survey respondents were from 19 local authority areas, as shown in the table below.

Local Authority	Overall digital session bookings	Number of Survey Respondents (Live sessions)
Aberdeen City	5	1
Aberdeenshire	9	4
Angus	8	3
Argyll and Bute	0	0
Clackmannanshire	3	0
Dumfries and Galloway	4	1
Dundee City	2	1
East Ayrshire	11	1
East Dunbartonshire	5	0
East Lothian	22	3
East Renfrewshire	11	0
Edinburgh, City of	53	2
Eilean Siar	0	0
Falkirk	22	4
Fife	24	1
Glasgow City	19	2
Highland	22	3
Inverclyde	0	0
Midlothian	14	1
Moray	4	0
North Ayrshire	13	2
North Lanarkshire	18	4
Orkney Islands	0	0
Perth and Kinross	13	1
Renfrewshire	15	2
Scottish Borders	3	0
Shetland Islands	0	0
South Ayrshire	10	0
South Lanarkshire	24	5
Stirling	5	0
West Dunbartonshire	1	0
West Lothian	18	4
Other (e.g., Wales)	1	0
TOTAL	359	45

Q9: Which class/age group did you take part with?

Survey respondents included teachers from each of the primary school year groups P1-P7, with the most respondents being teachers of P4 and P7 classes.

Class/Age	Number of Survey Respondents
P1	1
P1-P3	1
ASN (P1-3) within a mainstream school	1
P1-P4	2
P1-P7	1
P2	2
P2, P3	2
P3	3
P3, P4	2
P4	8
P4, P5	1
P4-P6	2
mixed composite P4/7	1
P5	3
P6	2
P7	12
No response	1
TOTAL	45

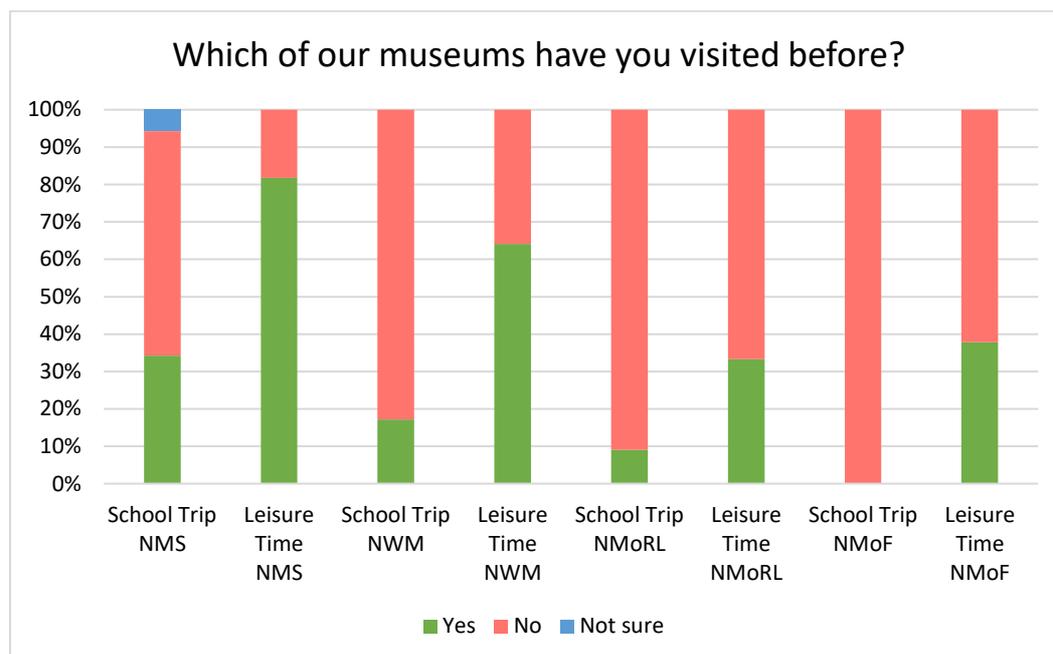
Q10: Which of our museums have you visited before?

Teachers were most likely to have visited the National Museum of Scotland (82% of respondents) and the National War Museum (64%) in their leisure time. Most survey respondents had not brought a class to any National Museums Scotland sites, but those who had were most likely to have done so at the National Museum of Scotland, (35%). None of the respondents had visited the National Museum of Flight on a school trip.

The table below shows the number of respondents who have/have not visited each museum, followed by a graph showing this same data as the relative percentages of those who have/have not visited previously.

	Yes	No	Not sure
On a school trip – National Museum of Scotland	12	21	2
In your leisure time – National Museum of Scotland	36	8	0
On a school trip – National War Museum	6	29	0

In your leisure time – National War Museum	25	14	0
On a school trip – National Museum of Rural Life	3	30	0
In your leisure time – National Museum of Rural Life	12	24	0
On a school trip – National Museum of Flight	0	32	0
In your leisure time – National Museum of Flight	14	23	0



Q11: How did you find out about our Digital School Sessions? Tick all that apply.

Respondents (n=45) most frequently found out about the digital school sessions through the Scottish Primary Teachers Facebook page or by word of mouth.

Scottish Primary Teachers Facebook page	28	62%
Word of mouth	11	24%
Email to school/teacher	7	16%
Museums E-newsletter	4	9%
National Museums Scotland website	1	2%
Other: "Eventbrite," "Facebook," "Other member of staff," "A friend who works at the Museum"	4	9%

Q12: How did you find the Eventbrite booking process?

Of the 44 respondents who answered this question, 43 (98%) said the process was “easy” and only one respondent said the process was “moderate.” No participants said the process was “difficult.”

Comments:

"Very straightforward and it was very helpful that there were a number of timeslots to choose from meaning the class could watch the session live."

"The booking process was easy to navigate and there were emails to confirm my booking and remind me of the session times."

"So easy to do. Booking was quick and email received immediately. Liked the reminders leading up to the event too."

"Very quick to book and email confirmation received."

"No problems at all, kept up to date, easy to navigate information."

"Easy to choose a time and book tickets."

"One form to complete, link emails follow - containing further links."

"Very simple to click on the link and follow the instructions."

"Very simple, would highly recommend."

"Simple process."

"No difficulties."

Q13-15: Emails before the session

Q13: Before the session you were sent several emails. The number of emails was...too few, too many, or just right.

- Most respondents (41/44, 93%) thought the number of emails sent before the session was "just right," and only three respondents thought the number of emails was "too many."

Q14: Did you have all the right information before the session started?

- All of the teachers (44/44) responded "yes" that they had the right information before the session.

Q15: Was the timing of each e-mail suitable?

- All of the respondents (44/44) said that the timing of the emails about "important information and pre-session activity" was suitable.
- All of the respondents (43/43) said the timing of the emails about "session reminders" was suitable.
- Most respondents (41/44, 93%) said the timing of the emails with the "post-session activity and evaluation" was suitable, while 3 said the timing these emails were not suitable.

Comments:

- *"Post-session activity was not till after school finished that day. I thought it was going to be sent right after session for children to view."*
- *"Would have preferred the post-session activity available straight after watching video (possibly emailed beforehand)"*
- *"Evaluation was sent before the session."*

Positive feedback:

- *"I can be very forgetful and the emails were great for constant reminders"*
- *"Good communication - great to have a reminder to save from trolling through other emails."*
- *"Appreciated the concise and timely way information was delivered, particularly at this time of digital information overload!"*
- *"All great, and actually needed!"*

- *“Great correspondence.”*
- *“Really simple and helpful guidance - thank you”*

Q16: Did you watch your session live or at a different time?

Most of the respondents (43/44) watched the session live; one respondent said they watched the recording of a live session at a different time.

Q17: Did you think the session was scheduled at the best time of day?

Most of the respondents 89% (39/44) thought the session **was scheduled at the best time of day**. Comments from these respondents included:

“It suited me perfectly as my class return from lunch shortly before that so they were ready and settled for listening.”

“It was good to have the different options to choose from.”

“This was built into our timetable and the kids thought this was great.”

Two respondents (5%) thought the session **was not scheduled at the best time of day**.

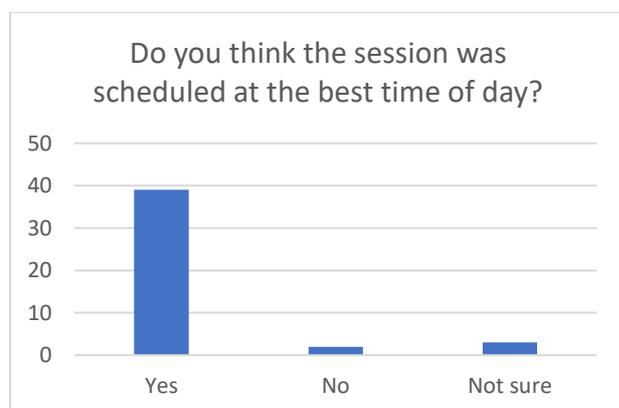
Comments from these respondents in response to the question “If not, what times would suit better?” included:

“Afternoons are almost always better - we tend to have more adult support in the mornings, so we generally use the mornings for core literacy and numeracy learning.”

“I think afternoons would suit my class better.”

Finally, three respondents (7%) said they were **not sure**. One included this comment:

“More afternoon options would have been better.”



Q18: Did you use the pre-session activity you were sent in an email?

The majority of respondents used the pre-session activity.

Yes	32	73%
No	12	27%

See **Appendix D** for example pre-session activities.

Q19: You said that you did not use the pre-session activity. Why not?

“Did not fit in to timetable due to other ongoing events which delayed introduction of topic.”
(Ancient Egypt)

“I ran out of time, but wished I had managed.” (Second World War)

"Didn't have time." (Dinosaurs)

"Did not have time." (The Romans)

"no time" (Ancient Egypt)

"Didn't read the email fully and short on time this week! (most weeks!) We have been doing a lot of other topic related activities." (Second World War)

"I didn't see the activity in the email." (Dinosaurs)

"I hadn't noticed it on the email" (The Romans)

"We were covering other things" (The Romans)

"Watched myself and already covered." (Dinosaurs)

"This was a treat for children as they had learned about Romans previously. So was more of a recap than new learning." (The Romans)

"We are going to be looking at WW2 as a topic from January so we are looking forward to using the information and activities in more depth and detail then" (Second World War)

Q20: You said you used the pre-session activity. What did you think of it?

Ancient Egypt: Mummification and the Afterlife

"Very interesting and good prior knowledge for the session."

"It was useful. It also gave me the chance to explain to the pupils what was coming up."

"It provided a good insight for the pupils as to what was to come. Grabbed their interest."

"Excellent! I great hook for the pupils, engaging and sparked many questions. They really enjoyed seeing the video clip and loved the live session!"

"The animated clip was interesting and added background to our pre-session discussion."

"It was really interesting. We have been studying the Ancient Egyptians all term and had never heard of the Scottish archaeologist Alexander Henry Rhind."

Dinosaurs!

"Really focused the children and led to great discussion which allowed me to see levels of knowledge and interest."

"Thought it was useful. Children enjoyed learning about fossils. It helped quite a few, as during a class discussion some had mentioned wanting to find out how fossils are formed."

"Animation was enjoyed by all. Some of the language was tricky but think the images helped explain what a fossil was."

"Great to check the children's knowledge and linked well with session."

"It was very useful to have just before the session began as it gave the children a feel for what would be coming up."

"It was a great child-friendly video- informative and fun and really set us up for the live"

"Very informative, engaging and set the scene nicely."

"Really good, got the kids excited for the live session"

"A good, engaging introduction"

"Great"

"Very good"

"Kids really enjoyed video about fossils."

"Class enjoyed the Dino-no and Dino-yes quiz."

Second World War: Meet the Pilot

"I am very fortunate to have IPADs for my children and they absolutely loved being able to read up on the various parts. I thought it was well thought through and relevant. Created great opportunity for feedback and discussion in groups and as a whole class"

"Appropriate level"

"I thought it was good"

"Excellent"

"The children really enjoyed it and were very engaged"

"I thought the activity was great. We explored the website as a class then the children made the spitfires independently. They were really engaged throughout"

"It was good used in conjunction with the website to explore the background to Spitfires in WW2."

"Great as a wee task for the kids to complete as an extra topic lesson independently"

"I used it as a homework research activity and the children felt it was enough"

"The information was interesting however would have been even better if it was more interactive."

"I underestimated the amount of information on the website so didn't get through everything before the start of the session unfortunately."

The Romans

"It helped get the children engaged in the activity ahead and thinking about what they would be watching"

"Good, used it as a homework activity"

Q21-23 Objectives for taking part in the session

Q21: What were your objectives for taking part in the session?

Q22: Do you feel like your objectives were achieved?

When asked about their objectives for taking part in the session, common themes in teachers' responses included: **building on previous learning, stimulating interest in the topic, and having the opportunity to see real artefacts and interact with experts.**

Key quotes best representing these themes are **bolded** below.

The majority (40/43) of respondents said their **objectives were achieved**. Their objectives for taking part in the session are grouped by session topic:

Ancient Egypt: Mummification and the Afterlife

"Build on previous learning about mummification, see real life artefacts, create links when we cannot go on school trips at the moment."

"To learn more about mummification"

"To recap on mummification, practise phrasing and asking questions, learn some more facts."

"To enhance pupil knowledge about mummification and see artefacts from ancient Egypt. It was a great opportunity to have a virtual trip in these difficult, restricted times"

"We hoped to see some real artifacts."

"To engage pupils in their new topic and provide them with information which they'd like to search further."

"To compliment our topic and further our learning."

"To consolidate and find out more about Ancient Egypt. Children could have a different learning objective and teacher other than me."

Dinosaurs!

"Stimulate an interest in dinosaurs and explain how we know about them when they lived so long ago"

"Students have a keen interest in dinosaurs and I wanted to provide them an opportunity to learn about them outside of my teaching. For students to learn more about dinosaurs and fossils. Along with being engaged in their learning."

"Spark interest leading to further independent research task."

"Encourage interest in the children."

"Lots of pupils are interested in dinosaurs so to further explore this and prepare for a topic next term"

"Plan to study dinosaurs next term so tied in well to learning"

"To give the children a different learning experience and expose them to the NMS."

"It fit well with our IDL topic of Dinosaurs, Fossils and Volcanoes. As we are quite far away from the central belt our pupils would not normally get the chance to visit these large museums so it was good to get a chance to see the real items we had been learning about even if it was online and not in person. They felt like they really were on a virtual school trip and thoroughly enjoyed it."

"Learn more about dinosaurs, see some exhibits and an exciting event to look forward to in the absence of traditional trips."

"To use as an assessment tool and for the kids to enjoy and be inspired."

"For children to gain greater depth to their learning."

"We have been studying classification in relation to animals, so looking at fossils fitted in well."

"To learn a little bit about dinosaurs."

"To help the children learn more about dinosaurs and fossils"

Second World War: Meet the Pilot

"A taster of a topic to come later in the year. The class were very excited to share some of their knowledge and are looking forward to more of this topic in January. It was a real treat to be able to be part of a live broadcast and have an opportunity to ask the experts some questions."

"Getting the children even more engaged in our topic."

"We will be studying WW2 next term and I wanted to ignite their interest."

"Class are currently learning about WWII."

"Our current topic is WW2 and this fitted perfectly in with this."

"To use the session as an addition to learning about WW2 topic and get my class to feel more like it was real"

"Bring history alive"

"To bring a bit more life to the topic of the Second World War and to give the pupils a bit more of a Scottish perspective to it."

"Understand the Battle of Britain in more detail To understand how to study historical artefacts"

"To learn more about World War 2 pilots"

"Extension of Remembrance Day"

"To learn more about that aspect of World War 2"

The Romans

"Get kids excited about real life artefacts"

"To give the children real life examples of objects used by the Romans and extra information that they may have missed out."

"For the children to learn more about the Romans through exploring artefacts"

"We are learning about the Romans as our class topic."

"A treat for the children to enjoy."

"End of topic celebration"

Three respondents said their objectives were either **somewhat** (2/43) or **not** (1/43) **achieved**. Their objectives and comments are listed below:

Somewhat:

"Help the children see some proper artifacts as we have so many rules and regulations due to covid and to extend their knowledge." (Dinosaurs)

"Studying ww2" (WW2)

Not achieved:

"To learn more about the Battle of Britain and the use of technology in WW2. To provide a personal/human perspective to some of the information." (WW2)

Why objectives not met: "The information was great and it was fantastic to have a lot of local details (we're from Musselburgh) but I felt the presentation was slightly dry - I was expecting more of an "in-character" session. I'm not sure if the presentation we watched was live or not (1.30 on Tuesday 24th) but there was no interaction with the questions or answers we provided."

Q24: Which elements of the session did you feel your pupils enjoyed the most?

When asked about the elements of the session that they felt their pupils enjoyed the most, **seeing the artefacts**, the **interactive** nature of the sessions, **quizzes** and **shout-outs** were the most commonly stated reasons. Key quotes best representing these themes are **bolded** below.

Ancient Egypt: Mummification and the Afterlife

"Seeing a real life canopic jar, after we had created their own, reading hieroglyphics, and thinking of what a Shapti would help with in our class!"

"Seeing the objects was great. They were delighted to see things we had spoken about (amulets, canopic jars, shabtis). They also loved the interactive elements of the presentation."

"Seeing the artefacts and the interactive questions - great discussions in class"

"Artefacts and the quiz."

"The quizzes, interactive elements."

"They enjoyed the interactive elements"

"All of it."

Dinosaurs!

"Seeing the fossils, the guessing games and having their answers read out live"

"They enjoyed seeing the fossils and liked being able to answer the questions. They were particularly happy when they heard their class name read out."

"Seeing the exhibits and the opportunity to give an answer. Not forgetting the shout-outs!"

"The interactive questions were great and the kids really enjoyed them"

"They enjoyed the interactive parts - being set challenges and having to guess answers. They enjoyed seeing the fossils also."

"They absolutely loved taking part in the questions - they got very excited guessing what each fossil was."

"Identifying fossils. Looking at T-rex skull. Being able to ask questions."

"Answering the multiple choice and seeing objects"

"Seeing the fossils and guessing what they might be"

"Seeing the fossils and dinosaur bones."

"Seeing the fossils."

"Showing of objects."

"Seeing the objects."

"Quiz"

"All of it. Pitched well. Tasks well timed. Caught childrens interest."

Second World War: Meet the Pilot

"Being able to ask questions about East Fortune and planes during ww2. They also enjoyed looking at how different parts of the uniform helped the pilots, especially the secret aspects of a fighter pilot's boots."

"Being able to see the uniform worn by a person, and also all of the little surprises like the compass hidden in the button and the penknife in the boot"

"Learning about the uniforms and the things like the secret knife in the boots and the compass in the button. Having the opportunity to ask questions."

"Discussing the different parts of the uniform and the concealed compass was a hit! They enjoyed hearing about the spitfire."

"The pre-session tasks we good - the website is great and we will be using it more. The class were continuing to make their Spitfire models during the session. Some of the photos were interesting and we liked the secret compasses and maps."

"Looking at the photos and the hidden parts of the uniform and learning what they were for"

"They enjoyed hearing about the different parts of the pilot's uniform."

"The explanations of the clothes and the photos"

"Looking at the old pictures"

"The facts, photos and explanations"

"They liked the fact that it was done in character as it really gave them something to relate to."

"They enjoyed seeing the artifacts from the time and asking their own questions"

"Real time question and answer facility"

"All of it, everything was explained well."

The Romans

"They really enjoyed the 'guess what the object is' (theater tickets) and seeing the comparisons between modern day items and Roman equivalents."

"Looking at the artifacts."

"The true or false as they felt involved"

"Interactive parts."

"Interactive questions"

"Questions"

Q25: How did you feel about the length of the session?

Most respondents (35/42, 83%) felt the session length was “just right.” Four respondents felt the session was too short (including one respondent whose class attended the Ancient Egypt session, one whose class attended the Dinosaurs session, and two whose classes attended the Second World War session). Three respondents whose classes had attended the Second World War session answered by saying “other” and gave the following explanations:

“It wasn't too short but I felt it could easily have been about 10 minutes longer”

“Without answering questions at the end, it was a bit short.”

“It was about right, but the children would have benefitted from slightly longer to discuss the questions”

Q26-28: How inspired were your pupils about this topic before and after the session? How engaged were your pupils during the session?

Respondents were asked, “On a scale of 1-10, how inspired were your pupils about this topic BEFORE/AFTER taking part in this Digital Session (where 1 is not in any way inspired and 10 is incredibly inspired)?” and “On a scale of 1-10 how engaged were your pupils during the session (where 1 is not engaged and 10 is very engaged)?”

Engagement was high across all session topics, and 64% of respondents said their pupils were **more** inspired following the session.

Session Topic	n	Q26: How inspired BEFORE (avg)	Q27: How inspired AFTER (avg)	Range in scores across Q26- Q27	Number of classes increased inspiration	Number of classes same inspiration	Number of classes decreased inspiration	Q:28 Engagement during session (avg)
Ancient Egypt	7	8.43	9.29	7-10	3	4	0	8.86
Dinosaurs	15	7.2	9.40	6-10	15	0	0	8.67
Second World War	14	7.31	8.50	5-10	8	3	2	8.07
The Romans	6	7.83	7.40	6-10	1	3	1	7.67
OVERALL	42	7.54	8.83	5-10	27	10	3	8.36

**Please note that the sample sizes (n) and before/after averages for Second World War and Romans include two respondents who only answered one of the two questions (Q26 or Q27) and could therefore not be included in the comparisons across Q26 and Q27.

Q29: What was your favourite thing about our digital session?

The following open-ended comments were coded into categories/themes. Key quotes best representing these themes are **bolded**.

The interactive quality of the session, including the guessing games and Q&A at the end
“The interactive nature and the excitement of waiting on responses to questions. It generated a lot of buzz and discussion which has added to the excitement of starting WW2 as our topic in January!”

“I enjoyed how interactive the session was. The live video engaged the students well.”

“Despite being virtual, it felt as though we were included in the process.”

“The interactive questions and guessing games- being able to respond live”

"The interaction - questions and typing answers."

"They liked being able to answer the questions as we went along and being involved in the session."

"The interactive touch was great - the pupils loved seeing the response from the facilitator pop up on the screen!"

"That it was interactive."

"All of the interesting facts, and the Q&A at the end"

"The pace of the questioning ensured all pupils stayed focused on the task."

"Guessing section."

"The format was varied enough to keep the children's attention - slides/real objects/discussion points etc I liked the guess the object too."

"There was an interactive element, artefacts were shown."

Opportunity to attend a session that would not otherwise be possible due to distance

"That it was live and interactive. I loved that it provided an opportunity that our school wouldn't usually have as we are not close enough to the museum for a school trip."

"We could never visit the museum as we live so far away."

Seeing the artefacts/props, and making connections to topics covered in class

"Seeing the bomber jacket, compass and silk map. I thought it was great to have it planned as part of my lesson for that day and it fitted it perfectly"

"Learning new things that related to our topic. Good to tie in with things already explored in the classroom."

"Being able to see artefacts, especially the part of a coffin, as we had recently created our own so we were able to compare ours with real life."

"I also enjoyed learning about the Escape Boot and some of the other parts of the uniform e.g. silk scarf and compass."

"The historical focus of the session, the historical accuracy, the replica clothing and the little details like the secret compass and silk map"

"The artefacts and pictures were very engaging"

"I liked the props used."

"The props used"

"Seeing the photos of East Fortune and linking it to our local area."

"The information that we learned and getting to see artifacts from the time"

"That the children got to see real fossils"

"Seeing the fossils"

"Seeing the Roman artefacts"

"The mystery object!"

"Seeing real objects from the past."

"Seeing the artefacts and the questions"

"Seeing the objects and the wonder of the children."

"The explanations were pitched well and the real artefacts were impressive"

Providing a different experience for the pupils, opportunity to learn from an expert

"Something different for the children"

"Giving the children a chance to see something different."

"That we were able to use a digital session which brought the history in to the classroom"

"The 'in character' nature of it helps to bring it to life."

"The chance for someone else to teach!"

"The visuals. Hearing the information from an 'expert' and not just me or doing independent research."

"Being able to give the children another knowledgeable source as we can't go on trips."

"The fossils. The opportunity to give the pupils a different experience while not able to leave school and their excitement at the session."

Q30: How would you improve our digital session?

The following open-ended comments were coded into categories/themes.

Additional content

"Maybe some stories of what real pilots had experienced in WW2"

"Talk more about the artefacts, include an animation?"

"Possibly showing them a bit of the planes - the spitfire."

"Maybe try to show the children around the museum more."

Additional follow-up activities

"A couple more activities for the post-session (sent out in advance for teachers to access)."

"Some kind of forum where classes can share what follow-up activities they did."

"Maybe give a list of items discussed for further personal study"

Chat function and Q&A

"Possibly answer the questions by speaking on the camera rather than typing answers. The children may be more excited to ask questions if theirs was read out."

"Could better use be made of the live chat facility? In the Meet the Pilot session, the moderator was able to answer children's questions as they went along, which really engaged them. In this session there was less time for that."

"A little less answer time"

"We couldn't access the chat so felt we waited a long time for answers to be given as we couldn't participate or share our answers. Less waiting time. Too long for the age and stage of my class"

Length of session and interaction

"I think for a P7 audience it could have been a little longer"

"Make the session longer and ask questions of the audience during the session"

"I would make it slightly longer and have a task integrated or even a quiz at the end."

"Make the sessions more interactive and in character."

"Would have been good if it was more interactive."

"More interaction"

"More interactive bits"

"Perhaps an interactive activity to run alongside such as a quiz"

Sound quality

"The sound quality could have been improved."

"The sound quality was sometimes marred by echo from the room the presenter was in"

Positive feedback and requests for more sessions

"More please. Due to our rural location we cannot visit museums of your size and stature."

"If you could widen your topics so we could give links to other colleagues who do different themes, that would be brilliant! (Greeks is another one that would be helpful :)"

"I think it was really excellent as it was....keep them coming with a wider range of subjects?"

"N/A - The session was excellent. Perfect length and opportunity for children to ask questions. It was pitched at a great level for primary 7 as well and generated some quality discussion."

"It was perfect thank you!"

"It was great the way it was."

"It was wonderful, I can't think of anything."

"Nothing -only digital issues on our end."

"I can't think of any changes you should make."

"No improvements"

"I wouldn't"

"Not sure"

"Not sure."

Q31: Did you have any issues with accessing the session?

The majority of respondents (93%, 39/42) did not have any issues accessing the session. The comments from the three respondents who did report issues are listed below:

"The chat feature came up at the beginning but then went away and we couldn't participate with this feature."

"RM had blocked Microsoft teams. It was not on our network as we use GLOW. They had to create access."

"Digital issues with our technology - not yours."

Q32: If you are a classroom-based teacher, did any of your pupils watch whilst not in the classroom, whilst self-isolating?

Only two respondents answered "yes," whereas 36 selected "no" and four selected "N/A."

Q33: How did your pupils watch the session? Tick all that apply.

Almost all the respondents said their pupils watched the session on a **whiteboard/large screen**. One respondent said their pupils watched the session on individual laptops/PCs and individual tablets/mobile devices.

Q34: If you have pupils with additional support needs, how did they find accessing the session?

"All my pupils were able to watch the session & take part in the questions. The pace was good as it kept the children who struggle with attention engaged."

"They were engaged throughout and enjoyed it. The length was great - it was a very clear presentation. All very inclusive."

"They absolutely loved watching the session and were engaged with the rest of the class"

"We accessed the session as a whole class. They were positioned appropriately in class to maximise participation."

"Fine, with the support in the classroom."

“Some found it hard to concentrate, so I kept talking them through what was being discussed.”

“They accessed the session well (hard to focus for the whole time).”

“They enjoyed the sessions although they didn't engage with the questioning.”

“Teacher accessed and pupils were mainly engaged throughout”

“They enjoyed the session”

“They were engaged.”

“They were fine”

“No problems”

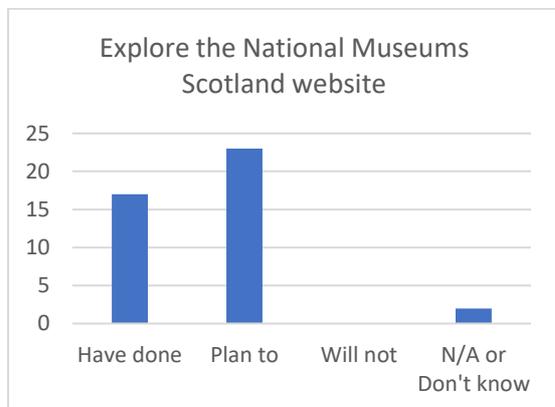
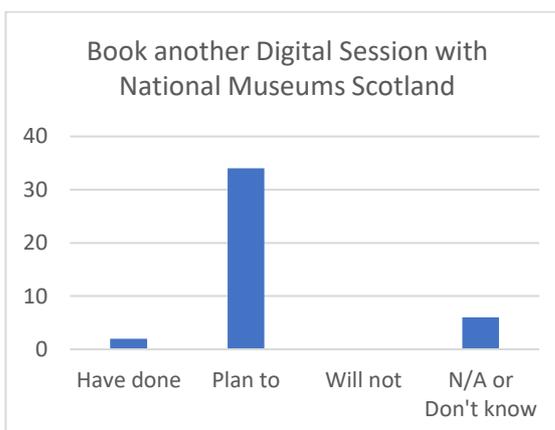
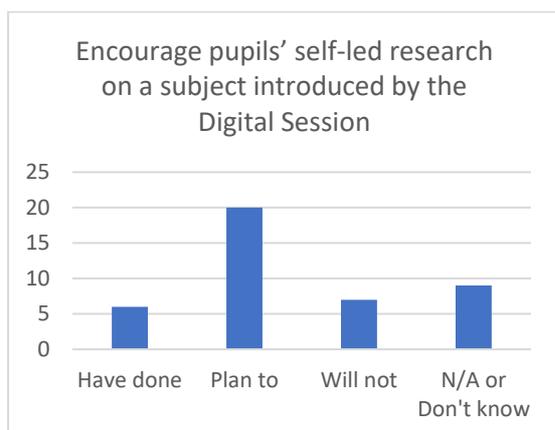
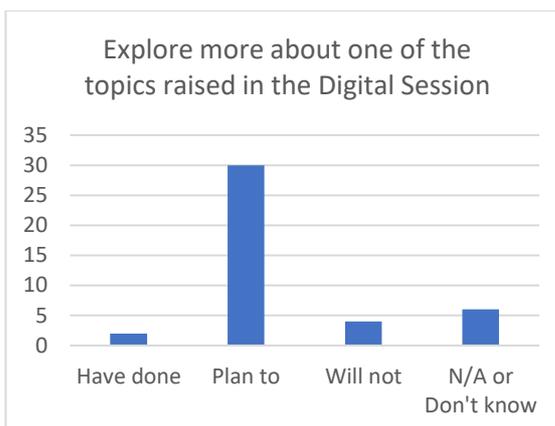
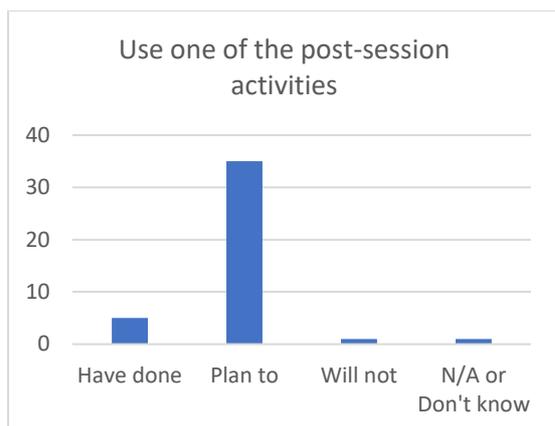
“No problems”

Q35: Following this session, will you do any of the following:

	Have done	Plan to	Will not	N/A or Don't know
Use one of the post-session activities	5	35	1	1
Explore more about one of the topics raised in the Digital Session	2	30	4	6
Encourage pupils' self-led research on a subject introduced by the Digital Session	6	20	7	9
Book another Digital Session with National Museums Scotland	2	34	0	6
Explore the National Museums Scotland website	17	23	0	2

As can be seen in the table above and the graphs below, the majority of survey respondents had plans to continue to engage their pupils in the topic covered in the digital session, or plans to personally engage with National Museums Scotland by booking another session in the future or exploring the NMS website.

Specifically, 95% said they have already used or plan to use one of the post-session activities, 76% said they have already explored or plan to explore more about one of the topics raised in the Digital Session, 62% said they have already encouraged or plan to encourage pupils self-led research on a subject introduced by the Digital Session, 86% said they have already booked or plan to book another Digital Session with National Museums Scotland, and 95% said they have already explored or plan to explore the National Museums Scotland website.



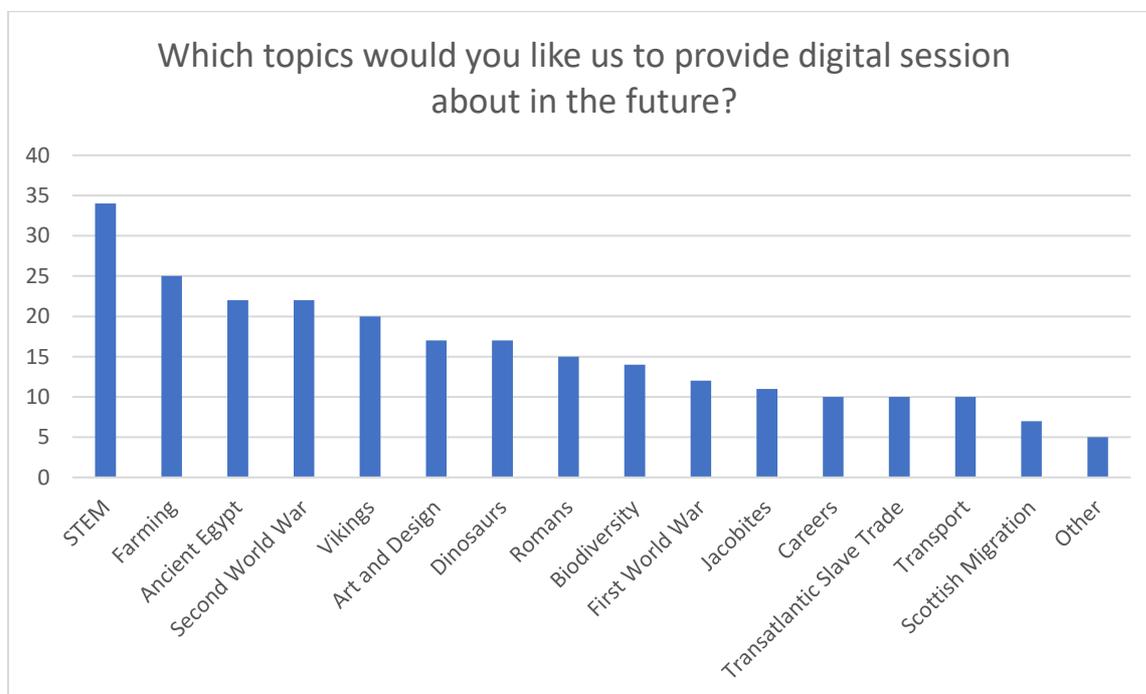
See **Appendix D** for examples of post-session activities.

Q36: Which topics would you like us to provide digital session about in the future?
Tick all that apply.

The most popular topics for future digital sessions were STEM, Farming, Ancient Egypt, and Second World War. However, it seems that sessions on any of the topics listed would appeal to teachers, with even the least popular topic generating interest from 7 teachers (17% of the 42 respondents).

STEM	34
Farming (e.g Field to fork, farm tours, etc)	25
Ancient Egypt	22

Second World War	22
Vikings	20
Art and Design	17
Dinosaurs	17
Romans	15
Biodiversity	14
First World War	12
Jacobites	11
Careers	10
Transatlantic Slave Trade	10
Transport	10
Scottish Migration	7
Other	5



Other responses included: "Greeks," "national disasters/the planet," "people in the past-gran was a girl topic (the fifties)," "Polar Lands," and "Scotland"

Responses to this question by local authority area can be found in **Appendix B**.

Q37: Would you be interested in a follow up digital session in 3-4 months' time?
More than half (60%) of respondents indicated they would be interested in a follow-up digital session in 3-4 months' time.

Yes	25
No	7
Not Sure	8
Other	2

Other responses included:

"The class topic would have changed so 3-4 months would be too long but I would book another if it suited the class topic"

"It would depend on what the intention behind it would be as we would no longer be learning about the Romans next term"

Q38: Would you recommend participating in our sessions to friends or colleagues?

Almost all the participants (98%, 41/42) said "yes" they would recommend the sessions their friends or colleagues. Only one participant said "not sure."

Q39: Following this session, are you more or less likely to make an in-person class visit to one of our museums in the future?

More than half (60%, 25/42) of the respondents said they were **more likely** to make an in-person class visit following their session. Their explanations are below:

"The content of the session was extremely interesting and provided opportunities for the children to think, discuss and ask questions. It was very enjoyable and I am sure, if circumstances allowed, then the class would love to visit a museum in the future."

"It would be good to get out into the world again with the class - field trips, in a new environment, are always more fun and memorable. The museum has so much to offer."

"The children were so engaged, they would be delighted to come on an in person visit to the museum"

"I think it is helpful when children can actually see the exhibits for themselves and get the chance to ask questions."

"Would love bringing my kids to the museum of flight."

"I love the museum and I promised my class that if we are allowed to travel next year, I will try my hardest to take them to the NMS. Our school is in a small village and many of our families are unable to travel and will have never visited a museum, so I would really love to take them."

"I would want to have a class trip to one of your museums but the location of our school would make it trickier to do"

"Although the distance is a barrier - we are in Perthshire and the cost of transport is high for trips."

"Would love to, though distance is an issue for travelling so far. Access to these sessions is a great way to encourage pupils to visit with families themselves as well."

Only one respondent said they were **less likely** to visit and their explanation was:

"We are too far away, but we would welcome more online sessions"

Finally, 38% of respondents (16/42) said **neither**. Their explanations are listed below, and generally fall into two categories: those who **cannot visit due to distance or cost**, and those who **already wanted to bring their class** for an in-person visit:

"We live too far away so the digital session was fantastic. I will personally visit with my husband though"

"Issues with transport costs have greatly curtailed our ability to take children out of school on trips in the last few years. I think there is a lot of scope for museums expanding their offer to include more outreach work with schools."

"The travel would be too difficult. This is a great alternative for us."

"Proximity to the museum from Renfrewshire is problematic"

"Our school is not close enough to a national museum for an in person visit. I loved that this online session gave us an opportunity we wouldn't have had otherwise and would love to do this again in the future."

"Too far away :("

"We couldn't get transport from Glasgow to Edinburgh. It is too costly."

"Due to our location it is not possible to visit unfortunately."

"We live in the South West of Scotland, it is too far to travel for our pupils."

"Transport to the museum is costly and time consuming so I would only book if there was a specific exhibit that I wanted my class to see."

"For my Primary 3 class, the journey time would be too long for a school trip. Hopefully it will inspire them to visit with their families."

"Last year I took a class to the National Museum of Scotland and had a lovely time. Would definitely take future classes again."

"Love taking the children on field trips, so I don't think taking part in the digital session would change that."

"The same likelihood"

"We would have loved to come, but obviously can't with COVID"

Comparing this question to Q10 (Which of our museums have you visited before?), 48% of survey respondents who had never taken a class to the National Museum of Scotland, 52% of those who had never taken a class to the National War Museum, 50% of those who had never taken a class to the National Museum of Rural Life, and 53% of those who had never taken a class to the National Museum of Flight before, said that following their digital session, they would be **more likely** to make an in-person visit to one of the National Museums of Scotland in the future.

Q40: We look forward to welcoming you back to our museums in the future. When do you think you would consider booking a visit to us?

Most teachers said either that their school/local authority had banned trips at present (48%) or that they would not expect to return until the 2021-22 school year (31%).

January-March 2021	2
April-July 2021	2
2021-22 school year	13
My school/local authority has banned trips at present	20
Other	5

Other responses included:

"We are unfortunately too far away!"

"N/A owing to distance"

"Transport to the museum is costly and time consuming from our school"

"Whenever possible"

"Not sure what the current situation is with trips in the pandemic"

Responses to this question by local authority area:

Local Authority (number of survey respondents)	January-March 2021	April-July 2021	2021-22 school year	My school/local authority has banned trips at present	Other	No response
Aberdeen City (1)				1		
Aberdeenshire (4)		1	1	2		
Angus (3)			1	2		
Dumfries and Galloway (1)				1		
Dundee City (1)				1		
East Ayrshire (1)				1		
East Lothian (3)				3		
Edinburgh, City of (2)			2			
Falkirk (4)			2			2
Fife (1)			1			
Glasgow City (2)		1	1			
Highland (3)				1	2	
Midlothian (1)				1		
North Ayrshire (2)	1		1			
North Lanarkshire (4)				3		1
Perth and Kinross (1)			1			
Renfrewshire (2)			1	1		
South Lanarkshire (5)			1	2	2	
West Lothian (4)	1		1	1	1	

Q41: Is there anything else you'd like to share with us?

Open-ended comments were coded into categories/themes.

Comments mentioning a desire to attend another session in the future:

"My class thought this workshop was fantastic. They loved seeing the objects and I thought the interactive nature of the workshop kept everyone listening and involved. The presenter spoke clearly and enthusiastically about the Ancient Egyptian objects she was showing. I have highly recommended your workshops to other colleagues and I will keep an eye out for future events."

"Just a huge thank you from myself and all the children in P7 for a super workshop. We hope we can get involved with another one, digitally or in person very soon."

"I felt it was very worthwhile and would book more sessions, I like they are recorded in case the technology fails"

Comments about how the sessions being digital increases accessibility:

"This was an excellent opportunity for our pupils to engage with your staff and artifacts that they would not normally get to have. I hope that even once the restrictions are lifted you would consider still planning events like this so that children who live outwith the central belt still have access to this type of session. Thank you for a well thought out, engaging session."

"My appreciation for offering these sessions. As a small rural school many of our pupils miss out on visits to museums etc."

"Thank you for the session today - my class LOVED it! Really great to be able to access these sessions during these times."

"In non Covid times, the biggest barrier to booking school trips is the cost of transport. Are there likely to be any subsidies available for this?"

Positive comments about presenters and enjoyment of the session:

"Great host, presented perfectly - we all loved it thank you."

"Thanks very much to the presenters."

"My class were so excited by the response we received to our email asking a few questions after the session. Fantastic responses that were greatly appreciated."

"Thank you for a really fun and interesting session - we really enjoyed it (they loved the sponge on a stick!!)"

"Thank you for providing an engaging and interactive session which my students thoroughly enjoyed."

"Great session, thank you so much for making these sessions available"

"This was a fantastic learning experience for our pupils - thank you so much! I learned a thing or two myself!"

"Super session - for pupils and staff!"

"Thank you for the session it was interesting"

"No - we really enjoyed our session"

"Just a big thank you!"

Comments about session functionality:

"We typed in several questions during the session but did not receive any answers so the class were rather disappointed by that."

"The class really enjoyed the session. If the session were recorded, is there any facility for subtitles?"

Q42: Can we contact you in the future? Please tick all that apply. Would you like to:

Enter our prize draw	38	90%
Be added to our schools newsletter mailing list (if you are not already included)	30	71%
Be involved in future consultation with us about our schools programme	23	55%
I do not wish to be contacted	2	5%

Many survey respondents were happy to be contacted by the museum in the future, either via the schools newsletter (71%) or to be involved in future consultation about the schools programme (55%).

Part 3: Focused and Integrated Analysis

Level of Engagement During the Sessions

Level of engagement was assessed using a variety of methods/data:

1. Sessions booked and attended
2. Number of logins that spanned the length of the session
3. Watching at a later date
4. Use of pre-session activity
5. Teacher report of student engagement
6. Use of follow-up activities
7. Excitement, asking questions and giving positive feedback during sessions
8. Twitter engagement with the @NMSEngage account or more generally on Twitter

Sessions booked and attended are shown in the table below. All available session spaces were fully booked within 48 hours of advertising. Confirmed attendees were those that commented or asked/answered at least one question during the session. At time of booking, teachers who indicated they would watch the recorded live session at a later date are included in the rightmost column; however some of these teachers did watch the live sessions with their classes.

Session	Date/time	Number of Bookings	Confirmed attendees (at live sessions)	Will watch at later date
Ancient Egypt: Mummification and the Afterlife	19 November 2020, 11:10	16	11	4
	2 December 2020, 11:30	15	13	
	2 December 2020, 13:30	15	13	
	Ancient Egypt Total	46	37	4
Dinosaurs!	12 November 2020 10:30	15	11	
	12 November 2020 11:30	15	12	1
	12 November 2020 13:30	15	12	
	26 November 2020 10:30	15	12	2
	26 November 2020 11:30	15	12	1
	26 November 2020 13:30	15	11	2
	3 December 2020 10:30	15	13	1
	3 December 2020 11:30	15	13	
	3 December 2020 13:30	15	15	
Dinosaurs Total	135	111	7	
Second World War: Meet the Pilot	10 November 11:30	10	10	
	10 November 13:30	10	9	1
	11 November 11:30	10	9	
	11 November 13:30	10	9	1
	24 November 11:30	15	13	1
	24 November 13:30	15	15	
	Second World War Total	70	65	3

The Romans	1 December 2020, 11:30	16	15	
	1 December 2020, 13:30	15	12	3
	8 December 2020, 11:30	15	13	
	8 December 2020, 13:30	15	12	2
	Romans Total	61	52	5
Biodiversity: Life in Scotland (pre-recorded)		24	n/a	n/a
Second World War: Meet the Pilot (pre-recorded)		23	n/a	n/a
Pre-recorded Total		47	n/a	n/a
OVERALL TOTAL		359	265	19

Number of logins that spanned the length of the session

It should be noted that the data from the attendance reports (as summarised in the table below) must be interpreted with caution, as one login does not necessarily equate to the session viewing time of one class/individual. Not all logins in the attendance reports were identifiable as individuals, meaning that it is not possible to distinguish between one class/individual logging in across different devices (perhaps if having connection issues or showing the presentation on two screens), from two individuals logging in separately.

However, for the purpose of creating the table below and attempting to get an estimate of whether classes/individuals watched the majority of the presentation, logins identified by the same email address that stopped and then restarted (without overlap) were added together as one login length.

Session	Date/time	Length of session min:sec	Number of logins during session	Number of logins >25 minutes
Ancient Egypt: Mummification and the Afterlife	19 November 2020, 11:10	30:50	13	13 (100%)
	2 December 2020, 11:30	32:32	13	13 (100%)
	2 December 2020, 13:30	30:29	15	15 (100%)
Dinosaurs!	12 November 2020 10:30	27:42	14	11 (79%)
	12 November 2020 11:30	23:48	12	9 (75%)
	12 November 2020 13:30	23:31	13	11 (85%)
	26 November 2020 10:30	27:52	15	12 (80%)
	26 November 2020 11:30	24:25	12	12 (100%)
	26 November 2020 13:30	26:46	10	10 (100%)
	3 December 2020 10:30	29:14	18	16 (89%)
	3 December 2020 11:30	25:53	14	12 (86%)
	3 December 2020 13:30	27:41	18	13 (72%)
Second World War: Meet the Pilot	10 November 11:30	21:18*	8	5 (63%)
	10 November 13:30	20:28*	9	4 (44%)
	11 November 11:30	21:42*	9	7 (78%)
	11 November 13:30	20:32*	5	5 (100%)
	24 November 11:30	24:24*	17	15 (88%)
	24 November 13:30	22:16*	16	15 (94%)
		*plus at least 5 min of Q&A at end of session via chat function		

The Romans	1 December 2020, 11:30	32:50	14	14 (100%)
	1 December 2020, 13:30	33:35	12	11 (92%)
	8 December 2020, 11:30	35:12	16	13 (81%)
	8 December 2020, 13:30	35:16	19	16 (84%)
Biodiversity: Life in Scotland (pre-recorded)		26:45	39	16 (41%)
Second World War: Meet the Pilot (pre-recorded)		21:29	38	16 (42%)**
		** Number of logins >20 mins due to shorter length of session		

Watching at a later date

Across all the live digital sessions, there were 68 logins **after** the session aired. Of these logins, the majority (74%) were two minutes or less in total length. About a third of these post-live logins were from one class of pupils watching a session of "Second World War: Meet the Pilot" that had aired previously in November. The pupils logged in individually over a few days in mid-February and were presumably watching as part of their home learning.

Use of pre-session activity

Seventy-five percent of survey respondents said they used the pre-session activity and provided positive feedback about it (please see Q18 and Q20 of the survey), including:

- *"It provided a good insight for the pupils as to what was to come. Grabbed their interest."*
- *"Really focused the children and led to great discussion which allowed me to see levels of knowledge and interest."*
- *"I thought the activity was great. We explored the website as a class then the children made the spitfires independently. They were really engaged throughout"*
- *"It helped get the children engaged in the activity ahead and thinking about what they would be watching"*

See **Appendix D** for example pre-session activities

Teacher report of student engagement

When asked to rate student engagement during the digital sessions on a scale of 1-10 (where 1 is not engaged and 10 is very engaged), survey respondents rated their pupils an average of 8.36. See question 28 of the survey results for more detail.

Use of follow-up activities

When asked about follow-up activities after the session:

- 95% of survey respondents said they have used or plan to use one of the post-session activities.
- 76% said they have explored or plan to explore more about one of the topics raised in the Digital Session.
- 62% said they have encouraged or plan to encourage their pupils' self-led research on a subject introduced by the Digital Session.
- 86% said they have booked or plan to book another Digital Session with National Museums Scotland.

- 95% said they have explored or plan to explore the National Museums Scotland website.

Additionally, 60% said they would be interested in a follow up digital session in 3-4 months time. (See survey questions 35 and 37 for more detail.)

Excitement, asking questions and giving positive feedback during sessions

The table below shows the enthusiastic engagement that happened during the digital sessions as classes used the chat feature to write about how excited they were to be at the session, to ask many thoughtful questions, and to express their gratitude for the sessions. Questions that were emailed after the sessions are also included below with those that were asked during the sessions.

Ancient Egypt: Mummification and the Afterlife	
Excitement/Anticipation	Questions
<p>Hello! We are really excited about this session! We are excited to learn more :) Hello! Lots of excitement here too! Hello, we are really excited for today's session! We are very much looking forward to this session</p>	<p>Did the Egyptians invent the mirror? Did Henry find any mummified animals? Did he enter any tombs? Do you know who any of them belonged to? What else did he find that you have at the museum? What material is the amulet made from? Do you know who the coffin which you showed us belonged to and when was it made? How long did it take to make a coffin? How long did it take you to learn hieroglyphics? Why did they believe in the afterlife? Did any of the objects come from Pyramids? How much would those artefacts cost to buy? How many mummies do you have in the museum? How did Ancient Egyptians clean their teeth? When was the first pyramid built? Why did they only have 3 seasons? Why did they throw the brain away? When was the first Egyptian Pharaoh? When did the Ancient Egyptian period start and end?</p>
Feedback/Thank you	
<p>Thank you so much Thank you so much, we loved it! Thank you very much, we loved this session! bye!! Thank you :-) Thank you! Thank you very much! We really enjoyed this session with you, Rachel! Goodbye and Thank you Thank you! We have really enjoyed it! Thank you, it has been great to see some real artefacts and to hear some new facts. Thanks for having us today we learned a lot more :) Thank you very much - we all enjoyed learning about Mummification and the Afterlife! A great learning experience for pupils</p>	
Dinosaurs!	
Excitement/Anticipation	Feedback/Thank you
<p>Hello from XX Primary school in XX! We are a very excited primary 4 and we love the t-rex too!</p>	<p>Thank you! :) Thank you! Thank you so much! We really enjoyed that session.</p>

<p>We are from XX Primary and our favourite dinosaur is Christmasaurus as we are reading the book too! We are from XX Primary and are reading the Christmasaurus too. We're a P3 class and we can't decide on our favourite because there are so many! But we do love the Christmasaurus! Primary 2 from XX Primary School are so excited! our favourite dinosaur is a T-Rex. Hi! We are very excited! We like Stegosaurus and Triceratops. We are happy to be part of this session. Hello! We are very excited to be here. Our favourite dinosaurs are the T-Rex and the Pterodactyl :) We voted for Pterodactyl as our favourite dinosaur. We're excited for our trip! Hello! We are excited to join in today. We are excited to learn more</p>	<p>Thank you! We really enjoyed ourselves! Thank you very much! Thank you very much! We had a great time :) Thank you! Can we leave some questions in the box please? Thank you and goodbye :) Thank you very much :) Thank you! We really enjoyed that! Thank you we had a great time. Goodbye Thank you very much! We loved it! Thank you very much! Thank you so much. We had so much fun :) Thank you very much! Thank you! Thank you! We have really enjoyed this session! Thank you so much! Thank you very much we really enjoyed the session. Thank you very much! Goodbye and thank you. Thank you very much! Thank you so much! We loved it! Thank you! thank you! Thank you so much. The children loved the learning session. Thank you we really enjoyed that! Thank you very much! Thank you very much for a very informative and fun session this morning. Thank you!! Thank you very much! Thank you, this was a great session Thank you so much, we loved this! :) thank you! Thank you - we've loved it! Thank you very much for the dinosaur event! It was so fun! Thank you. Thank you ... we loved it! Thank you very much and bye Thank you! Thank you!! Thank you so much! bye. Thank you!</p>
Questions	
<p>Where was the first place dinosaur fossils were discovered. What did dinosaurs eat? How did the dinosaurs die? How strong are dinosaur bones? Do you think there are types of dinosaurs that haven't been discovered yet? Are pteradactyls dinosaurs or not? Was the presenter a palaeontologist? What was the strongest dinosaur? Did dinosaurs have venom? What is the most uncommon dinosaur fossil to find? Do you think that you could make dinosaurs real again with their DNA? What was the deadliest dinosaur? What is the smallest dinosaur?</p>	<p>Thank you so much. The children loved the learning session. Thank you we really enjoyed that! Thank you very much! Thank you very much for a very informative and fun session this morning. Thank you!! Thank you very much! Thank you, this was a great session Thank you so much, we loved this! :) thank you! Thank you - we've loved it! Thank you very much for the dinosaur event! It was so fun! Thank you. Thank you ... we loved it! Thank you very much and bye Thank you! Thank you!! Thank you so much! bye. Thank you!</p>
Second World War: Meet the Pilot	
Excitement/Anticipation	Questions
<p>Hi! Primary 7 at XX Public school here :) we have lots of questions!</p>	<p>How long did air battles last for? What was the training like?</p>
Feedback/Thank you	<p>How many planes (roughly) have taken off from there?</p>

<p>Thank you very much, we really enjoyed this! Thank you for your time. Thank you very much for an informative session Thank You Thank you we learnt some new things today. Thank you very much. Thank you very much for your time today - we found it very informative and interesting. Thank you for your interesting presentation :) Thank you very much for a wonderful workshop :) Thank you for the presentation, we learned a lot! :) We love this video! Thank you :) Thanks Thank you for answering our questions! Thank you very much Thank you! Thank you for this afternoon's session. Thanks you very much :) Thank you very much!</p>	<p>How did the headphones work? did they have a cable? How did they know which plane to go in? How far could a spitfire travel before needing refuelled? What would they do if they needed the toilet or felt sick? How many people worked there during the war? What is the fastest plane there? How many people could fit in a Spitfire? How many Spitfires were there are East Fortune at any one time? Are the uniforms comfortable? Did the pilot get dizzy when they went up and down in the sky? Can the planes fly upside down? How long can they fly before needing more fuel? Would they not be identified by their uniforms? How many people could a spitfire carry? Did the pilot have to wear protective clothing? What size are the spitfires? Do you always have to wear Uniform when you're at work? How do the bombs come out of the planes? where is the furthest raf base in the uk? How many spitfires are there still around? Did pilots prefer tpo fly Spitfires or Hurricanes? Has Ross ever flown a spitfire? How fast can a spitfire fly? How big were the bombs? How did the pilots go to the toilet!?</p>
<p>More Questions</p>	<p>What did the pilots do before they went up in the air? Did they play games etc.?</p>
<p>EH would like to know if the pilots in WW2 received similar medals to soldiers? What type of radio did they have on board? Hi. We would like to know, what type of plane do you fly just now? does the spitfires shoot bullets? X would like to know, "How long did it take to build Spitfires and Hurricanes?" How long is a spitfire? Did they have guns and bombs? How much fuel would be in a tank? If you landed in enemy territory would they not realise you were British by your accent? Where did they make the side hats? How fast did the spitfires go? How / what did the pilots eat whilst flying? were spitfires made for ww2?</p>	<p>How did they activate the bombs? What did you have to do to become a pilot in WW2? were the pilots squished in the cockpit? Did the pilots have life jackets? Could pilots hear the air raid siren in the plane? Did the map get ruined in water? How many bombs could each plane carry? Do pilots have any other weapons apart from the one on their boot? Are pilots trained to use a gun? Were there women pilots? what do pilots do to protect themselves when they are under attack? what kind of things could they store in the plane? Weapons/food? what would happen if the plane ran out of fuel? how often did they need to refuel? How many pilots died in the war? How did spitfires get their name? What rank are you ? Would it be harder to bomb them ?</p>

<p>When was the first spitfire made? how much money would it cost to build a spitfire? what type of bullets did a spitfire use ? what was the maximum altitude of a Spitfire ? How far could the planes travel ? Can the spitfires still fly Why were the paths so small ? in the airfield If a pilot landed in enemy territory? where would a safe place be Why is a Spitfire called a spitfire? Is it so that only one bit would be destroyed if bombed? To make them harder to hit? How would the pilot/captain be picked? What was the fastest plane during WW2? Did the pilots carry gas masks? What was the heaviest bomb in the plane? Does the boot have any other sneaky features? were there any other objects secreted in the uniform? B would like to know how many pilots were in WW2. Did you get the uniform for free? Which planes do you have at the museum today? What was the most powerful weapon? How many planes were used in WWII? How did they track the planes? Did different planes have different uniforms? Were the Spitfires used to drop bombs? How many planes would take off per day? What made the Spitfire such a good plane? R would like to know what would you do if you lost your penknife? Could it be replaced? Are there other versions of the bomber jacket you showed us? Did the pilots carry any other gadgets?</p>	<p>Was it so they could be seen if the plane went down? How big were the planes? How fast were the planes? One of our boys would like to know what is your favourite task around the museum? Was there any special designs on the plane to get out safely if you crashed? How old would you have to be to become a pilot? What type of guns did they use in the war? What year was the code break made in? Were the planes made of fabric ? why does the compass have to be hidden? Would they have had different uniforms for different seasons? Where the planes noisy? What was the best plane for stealth? Did they have any other hidden items? Does the museum have any operational spitfires? Were there more boys than girls in the RAF? Are the jacket buttons made of real gold? What is the fastest speed a Spitfire could fly at? Doesn't the high visibility hood mean that the enemy can see you? How do you communicate when you're on the plane? How many planes would have been stored at East Fortune during WW2? How many acres is the airfield? Did they have any weapons in the planes? Was the airfield ever bombed by the Germans? What is your favourite plane from WW2? What other planes were in use at East Fortune? Why is the compass so small? What type of weapons would fighter pilots/ planes have had? Were there any guns in the airplane? How long would the flights normally be? How many pilots would be sent out from East Fortune each day? Was it hard to fly a WWII plane? How many people would be in the plane at the same time? Is it scary flying a Spitfire? How many planes were left after ww2? Question for Ross - Why did you want to do this job? Did they have any other secret compartments for weapons? What would they be carrying in the plane? Were there any other main models of planes apart from Spitfires? What's the most dangerous thing about flying in WWII?</p>
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<p>How many pilots were killed in WW2? From M</p> <p>How many people did it take to drive the plane?</p> <p>Did they ever use Nazi uniforms to disguise themselves?</p> <p>How many people can you fit in a spitfire?</p> <p>What is your favourite feature of the uniform?</p> <p>When were bomber jackets first invented?</p> <p>Why was the plane painted those specific colours?</p> <p>How many people would be on an air force plane?</p> <p>How many attacks took place from East Fortune air base?</p> <p>How much did the uniform and kit cost?</p> <p>What was the range of the Spitfire-how many km could it fly on one tank of fuel</p> <p>J would like to know, "Was the uniform and boots too heavy to run in if you had to get away quick?"</p> <p>What responsibilities did you have as a pilot?</p> <p>What weapons did the planes have?</p> <p>Where were you based? Country or sea?</p>	<p>Are the buildings that the people who stayed at East Fortune used still there?</p> <p>Were there bomb shelters at East Fortune?</p> <p>How many spitfires would there be at one battle?</p> <p>What was the slowest WW2 plane?</p> <p>Did the pilots have any removable guns if they were to crash land?</p> <p>How would you communicate if your microphone was broken?</p> <p>What was the most famous WW2 plane?</p> <p>What fuel do the engines run on?</p> <p>Who was the most famous WW2 pilot?</p> <p>C would like to know, "What is your favourite plane and why?"</p> <p>How scary was it when you were in the plane during the war?</p> <p>Was it hot or cold in the plane and how long did you stay up in the air?</p> <p>S from P7 would like to know how old the spitfire planes are? When was the first one made?</p> <p>N would like to know, "What does the lettering on the side of the Spitfire and other RAF planes mean?"</p> <p>How far can a spitfire travel before it runs out of fuel?</p> <p>D has asked 'How fast could the spitfire go?'</p> <p>What happened if their planes ran out of ammo?</p>
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The Romans	
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Excitement/Anticipation	Questions
<p>Hello from Primary 5 at XX Primary School. We are feeling excited and looking forward this! It's nice to meet you :)</p> <p>Thank you for inviting us. We are very excited!</p> <p>Hi everyone. We are waiting and very excited to be joining you.</p> <p>P5 at XX PS are very excited! Thank you for inviting us along to join in today's session :)</p> <p>Hi everyone! We are very excited.</p>	<p>How did they carve the tickets?</p> <p>What items were used to create a Roman crest?</p> <p>What were the Roman houses made from?</p> <p>What did their jewellery look like?</p> <p>What stopped the Romans from conquering the whole of Scotland?</p> <p>Did the Romans have different shaped shields, not just the rectangular one?</p> <p>When did the Romans start speaking English?</p> <p>What other games did the Romans play?</p> <p>What kind of things would they have seen at the theatre?</p> <p>Did they have pets?</p>
Feedback/Thank you	

<p>Thank you! :-) Thank you. We really enjoyed that Thank you! Thank you from P3!! Thank you very much Thank you for sharing your knowledge with us. The kids loved it! Thank you very much! :) Thank you Thank you! thank you very much for this presentation Thank you for today's session it was very interesting! Thank you very much! We loved that. Thank you so much! :) Thank you very much. Very enjoyable and interesting. Thank you so much! :) Thank you for this, we thoroughly enjoyed it. Thank you very much! Thank you for today!</p>	<p>Did the Romans decorate their houses at different times of the year? How did they tell the time? How did the Roman's celebrate birthdays? The Romans did bring elephants with them! What type of clothes did babies wear? What material was used to make swords and shields? Where did you get the objects? P3 are wondering how did you find all of these artefacts and where did you find them? L would like to know if Roman children wore school uniforms? Did the Romans wear glasses? Have you ever found any evidence? How many countries did the romans conquer in total? Did the Romans have chocolate? What kinds of lessons did boys do at school? We would like to know what sort of things the Romans would eat and drink please? What did the Romans go to see at the theatre? Did they travel using horses and camels? Did they celebrate any holidays like we celebrate Christmas?</p>
<p>More Questions</p>	<p>Did the Romans have christmas trees? Why were women not trained to fight? Did the Romans have bikes and scooters or anything like this? Were the theatre tickets for gladiator fights? Did Romans celebrate Christmas? N would like to know how they built the roads? How did Romans make their clothes? What is the most valuable thing you have found? What is the oldest Roman object you have in the museum? What is the smallest thing you have found? Where did you find it all? where did you find the bowl? Were there Dr's to give out medicine? What is the most common thing you have found? How did the Romans brush their teeth? If you made a mistake in the middle of your work, how would you erase it on your wax tablet? How did people figure out the name of the board game? do you have any roman talents in the museum, if so can you show us? We were wondering where did the Romans get the elephants from? Who was the oldest roman emperor? Can you give us some examples of Roman food that we would find unusual today please?</p>
<p>How did girls wear their hair? How did the elephants get to Britain? What did roman houses look like? How many battles did they have with Scotland? How did they manage to build their empire in the first place? What sports did they play? What did Roman money look like? What did they use to build things? What was their armour made from? What were their houses made from? Did they have christmas? Where did you get all your artifacts from? What did Roman children play with? Did the Romans celebrate their birthdays? How did Roman taps work? Did the Romans have a flag? How did Romans make their armour? What did their shoes look like? When was Julius Caesar assassinated and why? How did they train the elephants?</p>	

Twitter engagement with the @NMSEngage account

Following the digital sessions, 35 schools/teachers tagged @NMSEngage or @NtlMuseumsScot when tweeting about their positive experiences. Some examples include:

“What a fabulous dinosaur session with @NMSEngage. We learned, we gasped and we laughed - especially at the last fossil 🤔😳. Did you know a tyrannosaurus rex’s tooth was the size of a banana? 🍌🦖. Thank you Fiona 😊”

“P4 enjoyed their virtual Romans lesson from the National Museum of Scotland today, where we learned lots of new and interesting facts about what life was like for Roman people. When we can't go to the museum, the museum comes to us! Thank you @NtlMuseumsScot #Curious”

“We took part in a fantastic live lesson with the National Museum of Scotland! “Mummification and the Afterlife” was a wonderful way of consolidating what we know about Ancient Egypt! @NtlMuseumsScot”

“Year 6 enjoyed their virtual meeting with a Historian from the National Museum of Flight in Edinburgh, Scotland. He had a lot of knowledge of WW2. The gentleman wore a replica of a pilots uniform and shared facts about pilots from WW2. @NtlMuseumsScot #MSFTGlobalConnect”

A full list of the tweets can be found in **Appendix C**.

National Museum of Flight: Are digital sessions attracting new audiences?

There are several ways that these data supports the idea that the Second World War: Meet the Pilot digital sessions are attracting new audiences in comparison to previous in person visits to the National Museum of Flight.

First, only **three** schools (out of 64 that booked digital sessions) have previously attended sessions in-person at the National Museum of Flight in the previous two school years (2018-19 and 2019-20).

Second, bookings for the Second World War: Meet the Pilot digital sessions included schools from **nine** local authority areas from which schools had not visited during the previous two school years. (Please see table below.)

Local authority areas of school bookings for Meet the Pilot:

	Bookings 2018/19	Bookings 2019/20	Bookings 2020/21
Aberdeenshire	0	0	3
Angus	0	0	3
City of Edinburgh	9	9	10
City of Glasgow	1	1	5
Clackmannanshire	0	0	1
Dumfries & Galloway	1	1	0
East Dunbartonshire	0	0	1
East Lothian	6	9	6

East Renfrewshire	1	0	0
Falkirk	2	0	1
Fife	2	3	3
Highland	1	1	5
Midlothian	1	3	2
Moray	0	0	1
North Ayrshire	1	0	2
North Lanarkshire	0	0	1
Perth & Kinross	1	0	0
Renfrewshire	0	0	6
Scottish Borders	8	3	0
South Ayrshire	0	0	2
South Lanarkshire	0	0	3
Stirling	1	0	2
West Lothian	1	3	6
Other (e.g., Wales)			1
Total	36	33	64

Third, SIMD data also reflects more representation of pupils from areas of mid- to high-deprivation in the audiences for the Meet the Pilot digital sessions this year. See table below.

% of pupils who live in the 20% most deprived datazones in Scotland	Number of Scottish School Bookings 2018/19	% of Scottish School Bookings 2018/19	Number of Booked Sessions 2019/20	% Booked Sessions 2019/20	Number of Booked Digital Sessions 2020/21	% Booked Digital Sessions 2020/21
0 - <5% (lowest)	5	31%	2	18%	18	34%
5 - <10%	2	13%	1	9%	5	9%
10 - <15%	5	31%	3	27%	4	8%
15 - <20%	2	13%	1	9%	2	4%
20 - <25%		0%		0%	4	8%
25 - <30%		0%		0%	1	2%
30 - <35%	1	6%		0%	1	2%
35 - <40%		0%		0%	2	4%
40 - <45%		0%		0%	1	2%
45 - <50%	1	6%	2	18%	4	8%
50 - <55%		0%	1	9%	1	2%
55 - <60%		0%		0%	1	2%
60 - <65%		0%		0%	1	2%
65 - <70%		0%		0%	1	2%
70 - <75%		0%		0%	1	2%

75 - <80%		0%		0%	3	6%
80 - <85%		0%		0%	3	6%
85 - <90%		0%		0%		0%
90 - <95%		0%	1	9%		0%
95 + (highest)		0%		0%		0%
Total	16		11		53	

Finally, 53% of survey respondents who had never **taken a class** to the National Museum of Flight before, and 57% of those who had not visited the National Museum of Flight **in their leisure time** said that following their digital session, they would be **more likely** to make an in-person visit to one of the National Museums of Scotland in the future. In fact, one teacher specifically said, “Would love bringing (sic) my kids to the museum of flight.” (Based on responses to survey questions 10 and 39).

Marketing Trends

How are teachers finding out about digital sessions?

Responses to question 11 on the survey suggest that social networking among teachers is the most common way for teachers to find out about the digital sessions, with 62% using the Scottish Primary Teachers Facebook page, and 24% finding out by word of mouth.

When asked if they would like to be added to the schools newsletter mailing list, 71% of respondents said yes, indicating that most respondents were happy to be contacted directly with information about future digital sessions.

How did teachers find the booking process and pre-session emails?

Teachers almost universally found the booking process through Eventbrite easy and straightforward, they appreciated the confirmation email/session reminders, and all respondents said they had the right information prior to the session (see survey questions 12-15).

Are teachers regular visitors to National Museums Scotland?

Teachers were most likely to have visited the National Museum of Scotland (82% of respondents) and the National War Museum (64%) in their leisure time. Most survey respondents had not brought a class to one of National Museums Scotland’s sites, but those who had were most likely to have done so at the National Museum of Scotland, (35%). None of the respondents had visited the National Museum of Flight on a school trip. (See survey question 10).

When do teachers expect they will return to museums?

Most teachers said either that their school/local authority has banned trips at present (48%) or that they would not expect to return until the 2021-22 school year (31%). (See survey question 40).

Has taking part in digital sessions encouraged in-person trips in the future?

More than half (60%, 25/42) of the respondents said they were **more likely** to visit following the digital session, but many wrote in their comments about how distance and transport cost would be barriers to them being able to bring their class for an in-person visit. Several teachers wrote about digital sessions as a valuable opportunity to interact with the museum

in a way they wouldn't have had otherwise, and teachers hoped the sessions would also encourage pupils to visit with their families. (For more detail, see survey question 39).

Evidence for Meeting the Impact Framework Generic Outcomes

Inspiring experiences that develop knowledge

People have inspiring experiences that develop their knowledge and/or their understanding of themselves and/or the world around them, leading to change in ideas and/or actions.

Evidence:

- When asked how inspired their pupils were about the topic before and after the session, 64% of respondents said their pupils were more inspired following the session (questions 26-27).
- When asked about their objectives for taking part in the session, common themes included building on previous learning, stimulating interest in the topic, and having the opportunity to see real artefacts and interact with experts. The majority (40/43) of respondents said their objectives were achieved (see questions 21-23).
 - *"This was a fantastic learning experience for our pupils - thank you so much! I learned a thing or two myself!"*
 - *"The content of the session was extremely interesting and provided opportunities for the children to think, discuss and ask questions."*
- Following the sessions, teachers reported plans to continue to engage with the resources provided by National Museums Scotland (see question 35):
 - 95% said they have already used or plan to use one of the post-session activities,
 - 76% said they have already explored or plan to explore more about one of the topics raised in the Digital Session,
 - 62% said they have already encouraged or plan to encourage pupils self-led research on a subject introduced by the Digital Session,
 - 86% said they have already booked or plan to book another Digital Session with National Museums Scotland, and
 - 95% said they have already explored or plan to explore the National Museums Scotland website.

Enjoy themselves

People enjoy themselves and are enriched by the experience.

Evidence:

- When asked about the elements of the session their pupils enjoyed most (question 24), teachers mentioned the interactive nature of the sessions, and the specific content that appealed to their pupils.
 - *"They enjoyed seeing the fossils and liked being able to answer the questions. They were particularly happy when they heard their class name read out."*
 - *"They enjoyed the interactive parts - being set challenges and having to guess answers. They enjoyed seeing the fossils also."*
 - *"Seeing the objects was great. They were delighted to see things we had spoken about (amulets, canopic jars, shabtis). They also loved the interactive elements of the presentation."*
 - *"Learning about the uniforms and the things like the secret knife in the boots and the compass in the button. Having the opportunity to ask questions."*

- The comments at the end of the sessions, and emails sent afterward, also reflected how much the sessions were enjoyed.
 - *“Thank you for a really fun and interesting session - we really enjoyed it (they loved the sponge on a stick!!)”*
 - *“I just want to say a huge thank you for the Dinosaur session you put on for schools on Thursday last week. My class absolutely loved it and were so delighted with themselves for getting the questions right!”*

Making collections accessible

Scotland’s national collections are preserved, interpreted, and shared, making them accessible for all today and in the future.

Evidence:

- Teachers frequently mentioned the value in their pupils having the opportunity to see “real life artefacts.”
 - *“I think it is helpful when children can actually see the exhibits for themselves and get the chance to ask questions.”*
 - *“Being able to see artefacts, especially the part of a coffin, as we had recently created our own so we were able to compare ours with real life.”*
- Following the digital session, more than half (60%) of the respondents said they were more likely to visit one of the National Museums in-person in the future.
- Teachers also mentioned that they hoped these sessions would inspire pupils to visit the museum with their families.
 - *“For my Primary 3 class, the journey time would be too long for a school trip. Hopefully it will inspire them to visit with their families.”*

Broader range of people engage with heritage

A broader range of people engage with heritage through National Museums Scotland’s work.

Evidence:

- Providing digital sessions has opened up access to a wider range of schools from different local authority areas as well as those in areas of mid- to high-deprivation (see section on key data).
- A common theme across several of the open-ended questions was teachers writing about how the digital session provided an opportunity to interact with the museum that would not be possible otherwise due to distance or financial constraints.
 - *“This was an excellent opportunity for our pupils to engage with your staff and artifacts that they would not normally get to have. I hope that even once the restrictions are lifted you would consider still planning events like this so that children who live outwith the central belt still have access to this type of session. Thank you for a well thought out, engaging session.”*
 - *“More please. Due to our rural location we cannot visit museums of your size and stature.”*
 - *“I loved that it provided an opportunity that our school wouldn't usually have as we are not close enough to the museum for a school trip.”*
 - *“We could never visit the museum as we live so far away.”*

Challenging inequity

Inequality is challenged by sharing opportunities more equally.

Evidence:

- As described above, providing digital sessions created opportunities for those with geographic or financial constraints (including those from a wider geographic reach of local authority areas, and more schools from areas of mid- to high-deprivation) to engage with National Museums Scotland in a way not previously possible with in-person visits.
- When asked about the accessibility of the sessions for pupils with additional support needs, teachers gave positive feedback:
 - *“All my pupils were able to watch the session & take part in the questions. The pace was good as it kept the children who struggle with attention engaged.”*
 - *“They were engaged throughout and enjoyed it. The length was great - it was a very clear presentation. All very inclusive.”*

Recommendations:

Where to target next

- The digital sessions provided thus far have spanned across the primary school years well, but there are a few missing demographics to possibly target in the future. These include nursery pupils, secondary pupils, and more pupils at special schools. Designing sessions for these audiences will likely require some consideration of how best to engage and structure different types of digital interaction best suited to these pupils.
- There are also a few local authority areas not yet reached. These include Argyll and Bute, Eilean Siar, Inverclyde, Orkney Islands, and Shetland Islands where schools have not yet participated in digital sessions; as well as West Dunbartonshire, Dundee City, Clackmannanshire, where participation has been limited to only 1-3 bookings.
- National Museums Scotland should also continue to reach out and support schools from areas of mid- to high-deprivation and those that are unable to travel to the museum or have access to museum resources due to financial or distance barriers. This could be achieved by ensuring that digital sessions are targeted to, and places set aside for, those who would not otherwise be able to visit the Museums.

Key topics/areas for future sessions/resources

- When asked what topics they would like digital sessions on in the future, teachers' top 5 topics were STEM, Farming, Ancient Egypt, Second World War, and Vikings (More detail in question 36.)

Practical changes to the sessions

- Generally, feedback was very positive about the booking process and emails before the session. The pre-session activities were appreciated and teachers said they helped focus pupils on the topic, inspired discussion, and sparked interest.
- Feedback about the timing of the sessions was again very positive, with a few requests for more afternoon sessions.

- Teachers said the length of the sessions were either just right or could even be a bit longer to allow for more questions/discussion.
- One place where multiple suggestions came up was about answering questions at the end of the session. Teachers frequently mentioned how much their pupils enjoyed getting to ask questions and have them answered, allowing for more interaction, and children getting the chance to pursue the parts of the topic that they are personally interested in. Those that were unable to participate in the Q&A due to technical difficulties expressed that they felt their pupils were missing something valuable.
 - Answering questions via email after the sessions was also much appreciated.
 - One thing to consider is that when questions can be answered during the live session (either verbally or in the chat), this not only increases engagement, but also allows other pupils to hear/read the answers whether they are watching live or after the session has aired.

Future data collection ideas

- Future data collection should be focused on measuring directly what the pupils themselves think about the sessions.
 - One approach for this type of evaluation would be to create post-event online surveys that can be filled out by pupils individually, or collaboratively as a class (with their teacher facilitating).
 - Another possibility would be to provide worksheets with open-ended prompts that could be used as both a source of feedback and post-session reflection on what was learned.
 - For example: “Please use this space to write or draw your favourite part of the digital session” or “What was the most interesting thing you learned during the session?”
- As part of the preparation for future digital sessions, additional follow-up evaluation should examine pupils’ and teachers’ preferences for live online sessions versus pre-recorded sessions.
 - For example, for pupils who watched while learning remotely, would they prefer live sessions with interaction (quizzes, chat, Q&A), or pre-recorded sessions that can be watched on a more flexible timeframe?
 - And how do teachers feel about the tradeoff between engagement and flexibility when using live versus pre-recorded resources in the classroom?
- When evaluating pre-recorded sessions in the future, consideration should be given to finding the best way to measure engagement.
 - For the live digital sessions in this project, participation in sessions (via comments/questions) was a more reliable measure of engagement than trying to disentangle the less than perfect information in the attendance reports.
 - Could specialised software be used to build interactive elements into pre-recorded sessions, perhaps by incorporating a few mid-session quiz questions (i.e., an interactive video quiz) or by providing an opportunity for viewers to post their own questions at the end of the session?

- Alternatively, what information can be collected from a video platform like Vimeo regarding who is watching (Can a login be set up to track which participants have watched?) and how much they have watched (Can we see when they stop watching or if they start/stop watching over time)?

Appendix A: Age groups by session type

Ancient Egypt: Mummification and the Afterlife	
P1-P7	1
P2, P3	1
P3	10
P3, P4	8
P4	21
P4, P5	1
P5	3
P6	1

Dinosaurs!	
P1	11
P1-P3	8
P1-P3 ASN	1
P1-P4	4
P1, P2	5
P2	43
P2-P5 ASN	1
P2, P3	15
P3	21
P3, P4	5
P4	15
P4-P6	1
P4, P5	1
P5	2
P6	1
S3 (special school)	1

Biodiversity: Life in Scotland (pre-rec)	
P2-P6	1
P4	1
P4-P6	1
P4-P7	2
P4, P5	2
P5	3
P5-P7	3
P5, P6	1

P6	4
P6, P7	2
P7	3
S1	1

Second World War: Meet the Pilot (pre-rec)	
P2, P4 & P6	1
P4-P7	1
P5-P7	1
P6, P7	1
P7	18
S1	1

The Romans	
P2	1
P2, P3	2
P3	17
P3, P4	7
P3-P5	1
P4	20
P4, P5	1
P4-P7	1
P5	9
P6	2

Second World War: Meet the Pilot	
P4-P6	1
P5-P7	1
P5, P6	1
P6	11
P6, P7	5
P7	50
Year 6	1

Appendix B: Topics teachers would like to see digital sessions about in the future, by local authority area

Local Authority (number of survey respondents)	Ancient Egypt	Art and Design	Biodiversity	Careers	Dinosaurs	Farming	First World War	Jacobites
Aberdeen City (1)	1			1			1	
Aberdeenshire (4)	2	1	2	1	3	4	1	1
Angus (3)	1	1	0	1	1	1	1	
Dumfries and Galloway (1)	1					1		
Dundee City (1)	1	1			1	1		
East Ayrshire (1)			1	1				
East Lothian (3)	1	3	3	1	1	1		1
Edinburgh, City of (2)	2	1	1	1	2	2	1	2
Falkirk (4)	1	1			1	1		
Fife (1)								1
Glasgow City (2)	2	1	1	1	1	2	1	1
Highland (3)	2	1	2	1	1	3	1	3
Midlothian (1)							1	
North Ayrshire (2)	1	1			1			
North Lanarkshire (4)		1	1		1	2		
Perth and Kinross (1)	1					1		
Renfrewshire (2)	1	1						
South Lanarkshire (5)	5	3	1	1	3	5	2	1
West Lothian (4)		1	2	1	1	1	3	1

Local Authority (number of survey respondents)	Romans	Scottish Migration	Second World War	STEM	Transatlantic Slave Trade	Transport	Vikings	Other
Aberdeen City (1)	1		1				1	1
Aberdeenshire (4)	2	1	2	3		2	4	
Angus (3)	1		2	1			2	
Dumfries and Galloway (1)				1				
Dundee City (1)				1				
East Ayrshire (1)			1					
East Lothian (3)	1	1	1	3	3	1	1	
Edinburgh, City of (2)	2	1	2	2	2	1	2	
Falkirk (4)	1		1	2				2
Fife (1)		1			1			
Glasgow City (2)	1		1	2			1	
Highland (3)	1	1	3	3		2	2	
Midlothian (1)			1	1				
North Ayrshire (2)			1	2			1	
North Lanarkshire (4)	1			3			1	
Perth and Kinross (1)	1		1	1			1	

Renfrewshire (2)	1		1	1	1			
South Lanarkshire (5)	2	1	2	4	1	3	2	1
West Lothian (4)		1	2	4	2	1	2	1

Other responses included:

- “Greeks” (Aberdeen City)
- “national disasters/the planet” and “Scotland” (Falkirk)
- “people in the past- gran was a girl topic (the fifties)” (South Lanarkshire)
- “Polar Lands” (West Lothian)

Appendix C: Twitter Engagement

Topic	Date	Tweet	Stats
Dinosaurs	12/Nov/20	Today Primary 2 attended a virtual dinosaur workshop from the National Museum of Scotland. We looked at different fossils and guessed what they might be. We had great fun!	10 likes
Dinosaurs	26/Nov/20	We went on a virtual trip to the dinosaur museum this morning! Thankyou to @NMSEngage for sharing your knowledge with us.	9 likes
Dinosaurs	26/Nov/20	A super session from @NMSEngage learning all about dinosaurs and their fossils! Ask us to tell you some great facts we learnt! @LeadhillsS	1 retweet 8 likes
Dinosaurs	26/Nov/20	An exciting day removing our dinosaur from its water and taking part in the National Museums Digital Schools session on Dinosaurs. 🦖🦖 @NMSEngage	2 retweets 9 likes
Dinosaurs	26/Nov/20	Room 1 loved taking part in the National Museums Scotland Digital Learning session 'Dinosaurs!' today! It was great for them to revisit all of the knowledge they gained during our dinosaur topic and learn even more information! @NMSEngage	4 likes
Dinosaurs	26/Nov/20	Wow! Real dinosaur fossils! @NMSEngage	2 likes
Dinosaurs	26/Nov/20	P2/1 went on a virtual trip to the Natural History Museum this afternoon and learned about dinosaurs, 🦖 fossils and the job of a palaeontologist. @NMSEngage	1 retweet 11 likes
Dinosaurs	26/Nov/20	More from P3/2's talk from the national museum scotland all about dinosaurs. Amazing fossil hunting, just listen to the quality learning discussions the children are having with each other! @NtlMuseumsScot	1 like
Dinosaurs	26/Nov/20	This afternoon p4a got to be part of a Digital Schools Session all about Dinosaurs through the National Museums Scotland. They got to see and learn about different fossils and work out what dinosaur they came from. The class loved it! @NMSEngage	7 likes
Dinosaurs	26/Nov/20	Your lesson looked very exciting Room 7. I know how much you love dinosaurs 🦖🦖 you'll be able to tell us all about it in school 😊	1 like
Dinosaurs	26/Nov/20	Today P3/2 had a talk from the national museum scotland all about dinosaurs as they have been learning about fossils. They have been learning about the work of palaeontologists and the pupils became them today searching for fossils in from rocks!	1 retweet 1 like

Dinosaurs	26/Nov/20	We really enjoyed our live workshop about dinosaurs from the National Museum of Scotland. We particularly enjoyed seeing how big the teeth of the T-Rex really were, and finding out how huge they could be! Thank you.	1 retweet 6 likes
Dinosaurs	26/Nov/20	We joined a live Teams meeting from The National Museum of Scotland to learn more about dinosaurs. It was nearly as good as being there! Nearly...	1 retweet 8 likes
Dinosaurs	1/Dec/20	P2/1 were paleontologists this afternoon as we worked together to excavate 12 different dinosaurs from their eggs 🐣👉 We named them and researched a fact @NMSEngage	17 likes
Dinosaurs	1/Dec/20	👏👏👏 fantastic showcase of learning. Take a bow 🙇🙇	2 likes
Dinosaurs	3/Dec/20	We loved learning about dinosaurs this morning with @NMSEngage We wrote down some questions before the session started to see if we could learn the answers. 🐣👉 @DycePrimary #AimHigh #ShineBright #BeProud	9 likes
Dinosaurs	3/Dec/20	Thank you to @NMSEngage for a fantastic dinosaur lesson! We enjoyed taking part in the discussions and answering questions. Even our elf, Elfie, wanted to join in! Our job was to tell him a dinosaur fact which we have learned. 🐣	13 likes
Dinosaurs	3/Dec/20	Thank you to @NMSEngage for a fantastic dinosaur lesson in @KPS_Primary2D! We enjoyed taking part in the discussions and answering questions. We also walked 1 mile today for #fitmas. 🌟👍	2 retweets 18 likes
Dinosaurs	3/Dec/20	What a fabulous dinosaur session with @NMSEngage. We learned, we gasped and we laughed - especially at the last fossil 🐣🐣. Did you know a tyrannosaurus rex's tooth was the size of a banana? 🐣👉. Thank you Fiona 🐣	20 likes
Dinosaurs	3/Dec/20	Wonderful to read what you have been up to today P2D! You have been busy!!	In reply to the above tweet
Dinosaurs	3/Dec/20	@NMSEngage thank you so much for our live dinosaur virtual trip today. We thoroughly enjoyed it and learned so much! Seeing real life fossils was pretty cool 🐣👉. We really liked being involved and getting a shoutout 🐣.	7 likes
Dinosaurs	5/Dec/20	P123 took part in a live digital learning session with the National Museum Scotland to learn about dinosaurs.	10 likes
Topic	Date	Tweet	Stats
Romans	1/Dec/20	We have been learning about the Romans in Bo'Ness. We learned that the Bridgeness Slab will be appearing on postage stamps. We made our own Roman inspired stamps. @NMSEngage @NtlMuseumsScot	3 retweets 31 likes
Romans	1/Dec/20	Today we were excited to watch a digital session from the National Museum of Scotland about the Romans. We got to	12 likes

		see some Roman artefacts and did a quiz. Ask us what interesting facts we learned! @NMSEngage @NtlMuseumsScot	
Romans	1/Dec/20	P4 enjoyed their virtual Romans lesson from the National Museum of Scotland today, where we learned lots of new and interesting facts about what life was like for Roman people. When we can't go to the museum, the museum comes to us! Thank you @NtlMuseumsScot #Curious	1 retweet 9 likes
Romans	8/Dec/20	An excellent informative session from @NMSEngage on the Romans. A lovely end to our Romans topic.	11 likes
Ancient Egypt	19/Nov/20	P4 are taking part in a virtual workshop run by the National Museum of Scotland all about Ancient Egypt!	1 retweet 13 likes
Ancient Egypt	20/Nov/20	We took part in a fantastic live lesson with the National Museum of Scotland! "Mummification and the Afterlife" was a wonderful way of consolidating what we know about Ancient Egypt! @NtlMuseumsScot @CallanderP	2 retweets 12 likes
Ancient Egypt	2/Dec/20	P4 are learning lots of interesting information about Ancient Egypt by taking part in a Digital Schools Session with The National Museum of Scotland #nationalmuseumscotland	2 retweets 8 likes
Ancient Egypt	2/Dec/20	P3B have taken a virtual trip to the National Museum of Scotland to find out more about mummification in Ancient Egypt.	1 retweet 3 likes
Session	Date	Tweet	Stats
Meet the Pilot	11/Nov/20	Year 6 enjoyed their virtual meeting with a Historian from the National Museum of Flight in Edinburgh, Scotland. He had a lot of knowledge of WW2. The gentleman wore a replica of a pilots uniform and shared facts about pilots from WW2. @NtlMuseumsScot #MSFTGlobalConnect	1 retweet 4 likes
Meet the Pilot	11/Nov/20	Thank you @NtlMuseumsScot for a great virtual visit today. P4-6 were so interested and absolutely thrilled that you answered every single one of their (many!) questions!	12 likes
Meet the Pilot	24/Nov/20	P7A had the chance to listen to a "real" WW2 pilot, thanks to the National Museums of Scotland. They explained all about WW2 uniforms, secret compasses, the dangers of flying Spitfires and how East Fortune was used in the war. And we made our own Spitfire models	1 retweet 6 likes

Appendix D: Pre and post session activities

A few examples of the pre and post session activities are below:

Dinosaurs!

Pre-session activity

Download our Dino-no or Dino-yes quiz to use with your pupils before the session.

[Link to Dino-no or Dino-yes quiz](#)

To see how fossils are formed there is a lovely video on the Natural History Museums website that might help to put the topic in context for pupils.

<https://www.nhm.ac.uk/discover/how-are-fossils-formed.html>

Post-session activity

To find out how our giant dinosaurs got into our galleries, follow the links below to some short timelapse videos of the installation of the T. rex in Animal World gallery and Scotty, the T. rex from our recent Tyrannosaurs Exhibition.

<https://www.youtube.com/watch?v=cS11TBzkHv8>

<https://www.youtube.com/watch?v=pNmiewfvPaE>

If your class would like to know more about our T. rex, the link to the fact file is below.

<https://www.nms.ac.uk/TyrannosaurusRexFactFile>

Ancient Egypt: Mummification and the Afterlife

Pre-session activity

Prior to the digital session, watch our [animated video](#) (1min 42) about Alexander Henry Rhind to discover more about one of the first archaeologists to excavate in Egypt and to find out how his work helped people to understand more about life in ancient Egypt. Many of the objects he excavated can be found today in the National Museum of Scotland

Post-session activity

Further your learning by using Google Street View to explore our [Ancient Egypt Rediscovered Gallery](#). In the gallery find examples of the five objects we looked at during our session. What else will you discover?