



NORTH CAROLINA
State Board of Education
Department of Public Instruction

Report to the North Carolina General Assembly

Plasma Games Competitive Grant Program

[SL 2021-25, sec. 3.5\(a\)\(25\)](#) and [SL 2023-134, sec. 7.69\(a\)](#)

****DRAFT****

Date Due: May 15, 2024
DPI Chronological Schedule, 2023-2024

STATE BOARD OF EDUCATION

STATE BOARD OF EDUCATION VISION: Every public school student in North Carolina will be empowered to accept academic challenges, prepared to pursue their chosen path after graduating high school, and encouraged to become lifelong learners with the capacity to engage in a globally-collaborative society.

STATE BOARD OF EDUCATION MISSION: The mission of the North Carolina State Board of Education is to use its constitutional authority to guard and maintain the right of a sound, basic education for every child in North Carolina Public Schools.

ERIC DAVIS

Chair: Charlotte – At-Large

JILL CAMNITZ

Greenville – Northeast Region

JOHN BLACKBURN

Linville – Northwest Region

ALAN DUNCAN

Vice Chair: Greensboro – Piedmont-Triad Region

REGINALD KENAN

Rose Hill – Southeast Region

DONNA TIPTON-ROGERS

Brasstown – Western Region

MARK ROBINSON

Lieutenant Governor: High Point – Ex Officio

VACANT

Garner – North Central Region

J. WENDELL HALL

Ahoskie – At-Large

DALE FOLWELL

State Treasurer: Raleigh – Ex Officio

OLIVIA OXENDINE

Lumberton – Sandhills Region

CATTY MOORE

At-Large

CATHERINE TRUITT

Superintendent & Secretary to the Board: Cary

VACANT

Southwest Region

NC DEPARTMENT OF PUBLIC INSTRUCTION

Catherine Truitt, State Superintendent :: 301 N. Wilmington Street :: Raleigh, North Carolina 27601-2825

In compliance with federal law, the NC Department of Public Instruction administers all state-operated educational programs, employment activities and admissions without discrimination because of race, religion, national or ethnic origin, color, age, military service, disability, or gender, except where exemption is appropriate and allowed by law.

Inquiries or complaints regarding discrimination issues should be directed to:

Thomas Tomberlin, Director of Educator Recruitment and Support, NCDPI
6301 Mail Service Center, Raleigh, NC 27699-6301 / Phone: (984) 236-2114 / Fax: (984) 236-2099

Visit us on the Web: www.dpi.nc.gov

0422

JOINT LEGISLATIVE EDUCATION OVERSIGHT COMMITTEE REPORT REQUIREMENTS

The purpose of the Plasma Games Competitive Grant Program is to promote access to innovative digital and personalized learning solutions for high school students that bridge the gap between chemistry and physical science classes and career and technical education (CTE) career pathways. Public School Units (PSUs) participating in the program are to incorporate the software program developed by Plasma Games, Inc., in science, science, technology, engineering and math (STEM) classes and CTE programs, with the purpose of encouraging student interest and workforce development. A PSU participating in the program shall provide the Department with a plan for the placement of the STEM-focused educational technology developed by Plasma Games, Inc., in its schools and may include a plan from the pilot program established pursuant to Section 7.69(a) of Session Law 2023-134.

A qualifying school is eligible as follows:

- Any public school unit is eligible to apply to the Department of Public Instruction for a grant to develop or continue a program with Plasma Games.

FUNDING:

Session law 2021-180 provided \$2,500,000 to establish the Plasma Games Pilot. Funding for the Plasma Games Grant Program was extended in Session Law 2023-134 with an additional \$3,000,000.00 in FY24 and \$1,800,000.00 for FY25.

Grant applicants were informed that funds were to be used for the following purposes:

1. Plasma Games' licensing fees and related operating costs
2. Professional development and training for teachers related to the use of Plasma Games' software
3. Implementation costs of the pilot

Applicant's proposed budget must clearly align with program activities, be reasonable and necessary, and provide a breakdown of costs by category. The district, charter, or lab must verify no supplanting occurs. Requested funds were to be submitted, by category, in the 'Proposed Budget' section of the CCIP application. Applicants were directed to be mindful of their capacity to spend all requested funds in the time period defined by the grant. All funding disbursements and reporting will be managed by CCIP.

TIMELINE

The Plasma Games Program Request for Proposal and Guidance document was distributed to all eligible PSUs in early November 3, 2023, with an original deadline of January 15, 2024. The State Board of Education approved a revised allotment policy. In order to provide PSUs sufficient time to adjust any applications already submitted, or near completion, an extension was provided through February 15, 2024. On March 6, 2024 the State Board of Education approved submitted applications and funds were released shortly thereafter.

REPORTING REQUIREMENTS

Per SL 2023-134, the Department shall report the following information to the Joint Legislative Education Oversight Committee no later than May 15, 2024, and each year thereafter that funds are made available for the program:

- The number of public school units that submitted grant applications.
- The number of grants awarded.
- Specifically for the May 15, 2024 report, the percentage of grants that were awarded to public school units that participated in the pilot program created pursuant to Section 3.5(a)(25) of S.L.2021-25, as amended by S.L. 2021-180.
- The average size of grants awarded.
- The average daily membership of each public school unit that received grant awards.
- The ratio of grant funds received by each public school unit to the average daily membership of the public school unit.
- The total number of licenses in active use in the State.

S.L. 2023-134 also provided for the Department to include other information deemed relevant. The Request for Proposal and Guidance document outlined additional reporting requirements including:

- The target grade levels.
- Specific schools, grades, and courses where Plasma Games will be utilized
- Number of students that will be using the program in each semester or year-long course
- Number of licenses that will be purchased and when those licenses will be purchased
- Number of teachers utilizing the program
- Number of teachers who have completed professional development offered by Plasma Games
- Student outcomes related to the goals of the PSU's grant application

Since awards related to S.L. 2023-134 were made in March, 2024, PSUs will not have fully implemented the grant program in time for this report. Therefore, data specifically requested by the Department will be shared in the May 15, 2025 report.

NORTH CAROLINA DEPARTMENT OF PUBLIC INSTRUCTION (NCDPI) IMPLEMENTATION

This report is based on the most current activity and processes for the Plasma Games Competitive Grant Program related to S.L. 2021-180 and S.L, 2023-134.

BACKGROUND

Prior to Session law 2021-180, the North Carolina Department of Commerce Office of Science, Technology & Innovation (OSTI) facilitated a Plasma Games Pilot Program during the 2020-2021 school year.

In October 2022, Session law 2021-180 established the Plasma Games Pilot Competitive Grant program to support access to innovative digital and personalized learning solutions for high school students that bridge the gap between chemistry and physical science classes and career and technical education (CTE) career pathways. Legislation specified Plasma Games' use in select high school courses in CTE and STEM related courses and provided for a total of \$2,500,000. An allotment policy was approved by the North Carolina State Board of Education on February 3, 2022 providing for a \$60 per student license funding basis.

Funding for the Plasma Games Grant Program was extended in Session Law 2023-134 with an additional \$3,000,000.00 in FY24 and \$1,800,000.00 for FY25.

The grant application opened in the Comprehensive Continuous Improvement Plan (CCIP) portal on November 3, 2023 with follow up communication on November 17th through the CCIP system. An initial closing date of January 15th, 2024. The allotment policy was revised by the North Carolina State Board of Education on January 4, 2024. This action permitted the Department to distribute allotted funds (\$3.0 million) to the PSUs upon approval of applications. To accommodate any applications already submitted or nearly complete, the closing date was extended until February 15, 2024.

The allotment application was open to all North Carolina Public School Units that met the qualifications as outlined in the legislation. The application collected data from the PSUs that met the criteria as specified by the legislation including low performing school status, innovative school district status, at-risk status, and actual costs associated with implementation. The Office of Academic Standards, along with the Federal Programs Monitoring and Support division, worked collaboratively to publicize this opportunity through a variety of listservs, NCDPI Communications, and through the NCDPI webpage.

For the FY24 grant period NCDPI received 29 applications from 21 LEAs and 8 charter schools, with a total request of \$1,378,414.00.

- This represents an increase of 7 application requests from the previous submission window in 2022 under S.L. 2021-180.
- The increase in applications was directly related to the increase in applications from charter school applications.
- The total funding requested through CCIP applications decreased by \$410,486.00.

Awards were approved by the SBE on March 7, 2024 with funds distributed to districts immediately thereafter.

REQUIRED GRANT REPORTING OUTCOMES

NCDPI instituted a biannual survey collecting both quantitative and qualitative data to gather updates on the status of the grant, expenditures, number of staff who have received training, number of students who have accessed the program, and progress toward meeting their stated goals. The first round of survey data collection occurred from February 17 through March 31, 2023 with a second round from October 4, 2023 till January, 2024.

Reporting on Plasma Games piloting and implementation began with the [Fiscal Year 2021 Report on the Implementation, Expenditures, Outcomes and Recommendations for the Plasma Games Pilot Program](#) presented to the Joint Legislative Education Oversight Committee in June, 2021. The report was in response to the N.C. Department of Commerce Pilot program conducted during FY21.

- The report listed 24 PSUs as having applied to participate, with 20 PSUs awarded funds.
- 4 PSU were not awarded funds. (Avery, Bertie, Cleveland, Swain)
- 5 of the 20 PSUs awarded grant funding through the N.C. Department of Commerce Pilot program applied for the FY22-FY23 opportunity available through S.L. 2021-180.

Per S.L. 2021-180, in the May 18, 2023 report to the Joint Legislative Education Oversight Committee the Department reported on outcomes related to implementation of funding provided for FY22-FY23. The report noted:

- The Department received 22 applications for the FY22-FY23 grant period with \$1,788,900.00 requested by PSUs and approved for use by the SBE.

- Of the 4 PSUs not funded in the Commerce Department pilot, none chose to apply for the FY22-FY23 opportunity. Swain County did apply for the FY24 grant.

SUMMARY OF DATA RELATED TO S.L. 2021-180 FOR FY22 AND FY23

Table 1 displays data collected, as reported by PSUs, indicating the total number of licenses purchased using funds allotted through S.L. 2021-180. Data collected in this table is based on first semester data and may not indicate exact usage during the second semester, and does not include data related to funding from S.L. 2023-134.

- S.L. 2021-180 allotted up to \$2.5 million with \$1,788,900.00 requested and fully funded.
- As of the February 29, 2024 ESSER III expenditures report, all but \$48 of the \$1,788,900.00 had been spent.
- Based on the data below, as reported by each PSU, of the total \$1,788,852 spent, 31% has been utilized as of the Fall of 2023 reporting.
- PSUs originally planned for a total of 29,825 students to participate in the Plasma Games platform. As of the Fall of 2024, there were 2,962 students from 39 high schools who have or are currently participating in the Plasma Games program.

Table 1 - Plasma Games License usage by PSU

PSU Name	Number of student licenses purchased	Number of students participating as of Spring 2023 reporting	Number of students participating as of Fall 2023 reporting	Number/percent of licenses purchased but NOT in use as of Fall 2023 reporting
Beaufort County Schools	1,000	182	0	818 (82%)
Burke County Schools	850	282	146	428(50%)
Columbus County Schools	500	18	Pending data	482 (96%)
Dare County Schools	498	181	261	56(11%)
Edgecombe County Public Schools	450	206	180	64(14%)
Elizabeth City-Pasquotank Public Schools	482	22	Pending data	460 (95%)
Franklin County Schools	725	356	254	115(16%)
Gaston County Schools	2,548	621	210	1,717 (67%)
Harnett County Schools*	800	288	160	448 (44%)
Haywood County Schools*	1,504	340	118	1046(70%)
Henderson Collegiate	400	105	200	95(24%)
Hyde County Schools	150	34	0	116 (77%)
Pitt County Schools*	930	492	Pending data	439 (47%)
Public Schools of Robeson County*	2,100	1032	957	111(5%)
Sampson County Schools	750	145	Pending data	605 (81%)
Scotland County Schools	180	91	Pending data	89 (49%)

Surry County Schools	530	337	81	112(21%)
Tyrrell County Schools	50	20	30	30 (60%)
Wake County Schools*	13,200	1086	123	11,991(91%)
Watauga County Schools	500	138	23	339(68%)
Wilson County Schools	1,238	43	93	1102(89%)
Yadkin County Schools	440	161	81	198(45%)
TOTAL	29,825	6,180	2962	20,683 (69%)

Note - PSUs with "*" participated in the FY21 Commerce Department Pilot program

Following the first grant survey in the Spring of 2023, the Department communicated to all participating PSUs the importance of utilizing the Plasma Games software licenses purchased with grant funds.

- The total number of licenses used, or currently in use, is 9,142 of the 29,825 purchased.
- Compared with data collected in the Spring of 2023, the number of unused licenses has decreased from 79% to 69%.
- PSUs reported an expectation to use a total of 5,348 by the end of the 2023-2024 school year.
 - Combined with the 6,180 licenses used in the 2022-2023 school year this would mean a total of 11,528 licenses used out of 29,825 purchased.

As Table 1 indicates, PSUs responding to their overall progress in implementing Plasma Games reported an increase in their expectation for the overall use of Plasma Games by teachers in FY 23 compared to FY22.

- PSUs reported a greater number of professional development opportunities in the 2023-2024 school year increasing teacher and student engagement.
- PSUs indicated 102 staff are participating in the pilot grant program in the Fall of 2023, compared with 241 the previous year.
- 91 staff members received all or some of the training offered by Plasma Games.

Since the May 18, 2023 JLEOC Report PSUs report an intentional effort to increase the use of Plasma Games licenses purchased with grant funding, however PSUs reported:

- Changes in staffing and the fluctuating number of Chemistry, Physical Science, Physics, and CTE classes impacted when, and how many, students were using the platform.
- Variations in how teachers implemented the program have made tracking the number of students actively using the licenses difficult.

Additional narrative feedback provided by PSUs indicated the following:

- Implementation of Plasma Games has been challenging, in part due to the difficulty in eliminating the impact of staff changes and the variability in how much individual teachers are using the program in their respective classes.
- Many PSUs reported using Plasma Games as an extension, supplemental resource, or optional student activity.
- Overall, similar to the May 18, 2023 JLEOC report, PSU feedback indicates a range of results with some PSUs reporting stronger teacher and staff interest and student engagement, with others reporting little interest or benefits.

The data collection process for FY22 and FY23 revealed additional points of interest regarding PSU feedback and implementation of the Plasma Games Grant.

- \$548,520 of the allotted funds have been, or are being, actively utilized.
- \$1.252 million has been paid to Plasma Games for student licenses not utilized as of January 2024.

Plasma Games contracts were written and agreed upon at the local level directly between individual PSUs and Plasma Games. PSUs were advised to check with Plasma games on the status of licenses purchased but not used during the 2022-2023 school year and if those licenses would still be accessible during the 2023-2024 school year.

Grant applications and implementation associated with funds provided by S.L 2021-180 will conclude by September 30th, 2024. The Department will distribute a final grant check-in following that date to collect data regarding student outcomes and individual PSU goals.

REPORTING SUMMARY FOR S.L. 2023-134

Table 2 lists those PSUs who applied and were approved for Plasma Games grants under S.L. 2023-134 for FY24. The Department received 29 grant applications. All grant applications were awarded the full funding requested through the CCIP system.

In reviewing applications for the S.L. 2023-134:

- 2 of the original 24 applicants for the FY21 NC Commerce Department pilot have applied for all three the grant opportunities.
 - Cabarrus County Schools did not apply for funds from S.L. 2021-180.
 - Swain County Schools applied but did not receive funding in the Commerce Department pilot program, and did not apply for funding under the FY22-23 grant opportunity.
- 4 of the original 24 applicants for the FY21 Commerce Department pilot applied for funding with the FY24 Plasma Games grant period.
- 8 of the 22 PSUs that received funding from S.L. 2021-180 applied for continued funding for the FY24 grant period under S.L. 2023-134.

Table 2 - FY24 Plasma Games Grant Applicants

PSU Name	FY21 Dept. Of Commerce Pilot Participants	FY22-23 Session Law 2021-180 Participants	FY24 Session Law 2023-134 Participants
Haywood County Schools	X	X	X
Public Schools of Robeson County	X	X	X
Cabarrus County Schools	X	-	X
Swain County Schools	<i>(Applied but did not receive funding)</i>	-	X
Beaufort County Schools	-	X	X
Columbus County Schools	-	X	X
Dare County Schools	-	X	X

Elizabeth City Pasquotank	-	X	X
Franklin County Schools	-	X	X
Tyrrell County Schools	-	X	X
Buncombe County Schools	-	-	X
Chatham County Schools	-	-	X
CIS Academy	-	-	X
Clinton City Schools	-	-	X
Iredell-Statesville Schools	-	-	X
Lake Lure Classical Academy	-	-	X
Lenoir County Public Schools	-	-	X
Martin County Schools	-	-	X
Maureen Joy Charter	-	-	X
North Carolina Cyber Academy	-	-	X
Orange County Schools	-	-	X
Pinnacle Classical Academy	-	-	X
Rockingham County Schools	-	-	X
Shining Rock Classical Academy	-	-	X
Success Institute Charter	-	-	X
Vance County Schools	-	-	X
Warren County Schools	-	-	X
Weldon City Schools	-	-	X
Wilmington School of the Arts	-	-	X

SUMMARY OF DATA OBTAINED RELATED TO S.L. 2023-134 FOR FY24

Table 3 and Table 4 list the amounts requested and awarded to each participating PSU along with calculations related to the Average Daily Membership (ADM) for the PSU as a whole, as well as the cost per student based on the number of students the PSU intends to serve with the grant funding. The data for each PSU's ADM came from Month 4 ADM data as reported by the Department in the February 23, 2024 report, the date closest to when PSUs were required to submit their applications in the CCIP system.

Information detailed in Table 3 demonstrates:

- The total funding amount requested was \$1,378,414.00 for an average of \$47,531.52 with a median request of \$34,380.00.
- The average cost when comparing the amount requested to the PSU's full ADM, was \$39.97 per student with the cost per student ranging from as low as \$2.07 to \$458.18.

Table 3 - FY24 Plasma Games Funding Requests with ADM cost basis

PSU Name	Amount requested	PSU Average Daily Membership (ADM)	ADM:Funds received for each PSU
Beaufort County Schools	\$27,840.00	5,642	\$4.93
Buncombe County Schools	\$112,800.00	22,053	\$5.11
Cabarrus County Schools*	\$178,740.00	35,114	\$5.09
Chatham County Schools	\$57,417.00	8,868	\$6.47
CIS Academy	\$50,400.00	110	\$458.18
Clinton City Schools	\$48,000.00	2,862	\$16.77
Columbus County Schools	\$13,680.00	5,151	\$2.66
Dare County Schools	\$26,520.00	4,969	\$5.34
Elizabeth City Pasquotank	\$22,860.00	4,604	\$4.97
Franklin County Schools	\$169,054.00	7,860	\$21.51
Haywood County Schools*	\$31,740.00	6,466	\$4.91
Iredell-Statesville Schools	\$110,280.00	20,524	\$5.37
Lake Lure Classical Academy	\$11,403.00	441	\$25.86
Lenoir County Public Schools	\$42,300.00	8,167	\$5.18
Martin County Schools	\$76,540.00	2,508	\$30.52
Maureen Joy Charter	\$6,540.00	623	\$10.50
North Carolina Cyber Academy	\$16,020.00	2,340	\$6.85
Orange County Schools	\$37,020.00	6,984	\$5.30
Pinnacle Classical Academy	\$48,000.00	1,150	\$41.74
Public Schools of Robeson County*	\$104,940.00	20,440	\$5.13
Rockingham County Schools	\$56,040.00	11,069	\$5.06
Shining Rock Classical Academy	\$1,260.00	608	\$2.07
Success Institute Charter	\$29,840.00	88	\$339.09
Swain County Schools	\$9,900.00	1,794	\$5.52
Tyrrell County Schools	\$50,400.00	447	\$112.75
Vance County Schools	\$23,460.00	5,073	\$4.62
Warren County Schools	\$7,800.00	1,606	\$4.86
Weldon City Schools	\$7,080.00	683	\$10.37
Wilmington School of the Arts	\$540.00	222	\$2.43

Note (1) - PSUs listed in bold participated in the FY22-23 Pilot program.

Note (2) - PSUs with an "*" participated in the FY21 Commerce Department Pilot program

Information in Table 4 details the amount requested, the PSU’s ADM and the number of students the PSU intends to utilize the Plasma Games program.

- The final column details the cost per student when focusing on the specific number of students the PSU intends to participate. This column provides the most accurate measure of the cost of the program per student use.
- The average cost when comparing the amount requested by the number of students the PSU intends to participate is \$117.75 with a range from \$15.11 to \$458.18.
 - As of the Fall 2023 reporting period, 4 out of 22 PSUs in the previous grant had used 80% or more of the licenses they purchased based on the number of students they had intended to participate.

Table 4 - FY24 PSU Plasma Games Funding Request by cost per participating student basis

PSU Name	Amount requested	PSU Average Daily Membership (ADM)	Number of students the PSU intends to participate in the grant	Cost per student to participate in the grant
Beaufort County Schools	\$27,840.00	5,642	1843	\$15.11
Buncombe County Schools	\$112,800.00	22,053	3000	\$37.60
Cabarrus County Schools*	\$178,740.00	35,114	2979	\$60.00
Chatham County Schools	\$57,417.00	8,868	1100	\$52.20
CIS Academy	\$50,400.00	110	110	\$458.18
Clinton City Schools	\$48,000.00	2,862	279	\$172.04
Columbus County Schools	\$13,680.00	5,151	456	\$30.00
Dare County Schools	\$26,520.00	4,969	328	\$80.85
Elizabeth City Pasquotank	\$22,860.00	4,604	198	\$115.45
Franklin County Schools	\$169,054.00	7,860	1745	\$96.88
Haywood County Schools*	\$31,740.00	6,466	285	\$111.37
Iredell-Statesville Schools	\$110,280.00	20,524	3531	\$31.23
Lake Lure Classical Academy	\$11,403.00	441	120	\$95.03
Lenoir County Public Schools	\$42,300.00	8,167	700	\$60.43
Martin County Schools	\$76,540.00	2,508	861	\$88.90
Maureen Joy Charter	\$6,540.00	623	69	\$94.78
North Carolina Cyber Academy	\$16,020.00	2,340	308	\$52.01
Orange County Schools	\$37,020.00	6,984	378	\$97.94
Pinnacle Classical Academy	\$48,000.00	1,150	570	\$84.21
Public Schools of Robeson County*	\$104,940.00	20,440	1749	\$60.00
Rockingham County Schools	\$56,040.00	11,069	466	\$120.26

Shining Rock Classical Academy	\$1,260.00	608	45	\$28.00
Success Institute Charter	\$29,840.00	88	88	\$330.09
Swain County Schools	\$9,900.00	1,794	33	\$300.00
Tyrrell County Schools	\$50,400.00	447	300	\$168.00
Vance County Schools	\$23,460.00	5,073	50	\$469.20
Warren County Schools	\$7,800.00	1,606	465	\$16.77
Weldon City Schools	\$7,080.00	683	118	\$60.00
Wilmington School of the Arts	\$540.00	222	9	\$60.00

Note (1) - PSUs listed in bold participated in the FY22-23 Pilot program.

Note (2) - PSUs with an "*" participated in the FY21 Commerce Department Pilot program.

FINAL NOTES

In collecting feedback from PSUs participating in either the FY22-FY23 Plasma Games grant opportunity per S.L. 2021-180 or the FY24 opportunity per S.L. 2023-134 additional items of interest shared by PSUs include

- PSUs reported a significant increase in the opportunities for teacher professional development and the number of teachers participating in Plasma Games professional development, but a reduction in the number of teachers implementing Plasma Games in their classrooms.
- The Department communicated to all PSUs that the funds distributed from S.L. 2021-180 were for both the FY22 and FY23 school year. However, multiple PSUs reported that Plasma Games initially refused to allow unused licenses purchased in the 2022-2023 school year to be used in the 2023-2024 school year.
- During the most recent FY24 grant application window, one PSU reported their teachers receiving direct emails from Plasma Games advising staff to email their district leaders to keep funding for Plasma Games. PSU leadership was not copied on these emails.
- PSUs reported being advised by Plasma Games to shift to a site license at a cost of \$48,000. In one case it was specifically noted to a PSU that shifting to a site license approach would “ensure there is no hassle around license consumption this year”.
 - Both S.L. 2021-180 and S.L. 2023-134 require the Department to report on the number of students using the program.
 - S.L. 2023-134 requires the Department to report the total number of licenses in active use.